A Strategic Approach to Enhancing Sustainable Practices in Public Building Projects a Case Study of Indonesian Local Authorities

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PhD

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A thesis submitted in partial fulfilment of the University's requirements for the Degree of Doctor of Philosophy

Coventry University ETHICS

Medium - High Risk Research Ethics Approval

Where human participants involved in the research and/or when using primary data - Staff (Academic, Research, Consultancy, Honorary & External), Students (Research & Professional degrees) and Undergraduate or taught Postgraduates directed to complete this category of risk.

Project Title

SUSTAINABLE PRACTICES OF BUILDING PROJECTS IN INDONESIAN LOCAL GOVERNMENT

Record of Approval

Principal Investigator

I **request an ethics peer review** and confirm that I have answered all relevant questions in this checklist honestly.	X
I confirm that I will carry out the project in the ways described in this checklist. I will immediately suspend research and request new ethical approval if the project subsequently changes the information I have given in this checklist.	X
I confirm that I, and all members of my research team (if any), have read and agreed to abide by the Code of Research Ethics issued by the relevant national learned society.	X
I confirm that I, and all members of my research team (if any), have read and agreed to abide by the University's Research Ethics, Governance and Integrity Framework.	X

Name: Ferry Hermawan .....

Date: 16/01/2013.....

Student's Supervisor (if applicable)

I have read this checklist and confirm that it covers all the ethical issues raised by this project fully and frankly. I also confirm that these issues have been discussed with the student and will continue to be reviewed in the course of supervision.

Name: John Davies .....

Date: 20/06/2013.....

Reviewer

Date of approval by anonymous reviewer: 11/07/2013

Declaration

I declare that the work in this research project entitled "A Strategic Approach to Enhancing Sustainable Practices in Public Building Projects: a Case Study of Indonesian Local Authorities" has been performed by me in the Department of Civil Engineering, Architecture and Building under the supervision of Dr Neil Tsang and Dr Robby Soetanto. The information derived from the literature has been duly acknowledged in the text and list of references provided.

10 September 2015

DATE: _ _ _ _ _ _ _ _ _ _ _ _ _ _

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Ferry Hermawan

Abstract

In the last few decades, there has been well documented evidence that the performance of the public building projects in local authorities in Indonesia does not fully meet the expectation of the stakeholders involved and demonstrate sustainable practices. This mediocre performance impacts on the competitiveness of building industry, and therefore would require the development of a strategic approach to address these fundamental structural and cultural issues. The strategic approach, which facilitates sustainable practices, to a large extent, depends on the local priorities, goals and success criteria, which are dynamic and influenced by the expectations of various stakeholders involved in the procurement of public buildings. This research aims to develop a conceptual framework that will help local authorities to enhance sustainable practices of public building management. The empirical research work adopted case study strategy involving interviews with 24 public building practitioners and investigation of building defects on 34 projects. This research proposes LACU model, which represents a triangular relationship between contractors, local authorities and building end-users to illustrate the interactions between parties when undertaking their tasks throughout the project life cycle. A framework of Sustainable-Dynamic Capabilities was developed and applied to enhance understanding of sustainability provisions in public building development. Based on this framework and stakeholders' mapping illustrated by LACU model, this research has enhanced understanding on strategies of local authority to implement sustainable practices on public building projects. A template analysis through interview transcripts has been adopted to identify strategic approaches of local authority to deliver successful project by determining the roles of stakeholder at three different levels, provincial, regency or city and special authority. This research provides a novel empirically-based guidance for the local authorities to undertake sustainable public building procurement throughout project life cycle by adopting strategic approaches, such as employing innovative construction method, appropriate policy intervention by local leader, and changing business orientation.

Keywords: strategic approach, public buildings, local authorities, dynamic capability, sustainable

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List of Abbreviations and Acronyms

BPK	*Badan Pemeriksa Keuangan*/ The audit board
BPS	*Badan Pusat Statistik*/ National statistic body
Bupati	The head of *kabupaten* government
DAK	*Dana Alokasi Khusus*/special allocation fund, LG revenue source from national government transfer. DAK is an allocated revenue where national government has some power to control and monitor.
DAU	*Dana Alokasi Umum*/general allocation fund, a LG revenue source from national government transfer which equal to the need of PNS salary payement plus fiscal gap. The function of PAD is to minimize the gap of revenues among local governments.
DBH	*Dana Bagi Hasil*/shared revenue fund, a LG revenue source from national government transfer which is coming from natural resources taxes, income tax, and non-household property tax
Kabupaten	Regency or District, the third tier of Indonesian government under the national and the province governments, in rural regions.
Kota	Municipality, the third tier of Indonesian government under the national and the province governments, in urban regions.
KPK	*Komisi Pemberantasan Korupsi*/Corruption eradication commission
PAD	*Pendapatan Asli Daerah*/own-source revenue, a LG revenue source which directly collected by local governments
Perda	*Peraturan daerah*/Regional law
Perpres	*Peraturan Presiden*/Presidential regulation
Perpu	*Peraturan pemerintah pengganti undang-undang*/ Government regulation as substitue to undang-undang (law)
PP	*Peraturan Pemerintah*/ Government regulation
Walikota	The head of *kota* government/ Mayor

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CHAPTER 1 Introduction

1.1 Background

Sustainability offers an improved quality of life to human beings worldwide. Since the early 1990s, sustainability issues have influenced every development aspect in the world, and construction projects are no exception; they require serious consideration, with a particular focus on technology adoption, social-economic changes, and ecological aspects. The construction industry is the engine of economic development for many countries. The construction business is well known to have significant impacts on the environmental (McDonald and Smithers 1998, Ofori 1998, Poon 1997), and it also has a positive relation predominantly with the financial performance of a country (Sustainable Construction Task Group 2002). Sustainable practices could reduce environmental impact as well as increase the competitiveness of construction companies. Therefore, competitiveness becomes a central issue in construction business (Flanagan *et al.* 2007, Tan, Shen and Yao 2011) and an important factor to ensure a successful economy (Kirmani 1987, Wagner and Schaltegger 2003).

Sustainable practices in public building project refer to activities that demonstrate sustainability principles (Hill and Bowen 1997). The activities are relevant throughout the construction process as Langston and Ding (2001:249) stated that "Sustainable practices are relevant to the pre-design (or strategic planning) and design (or concept development) stage of facility creation, including the construction process itself [project life cycle]." Thus, sustainable practices in this research are defined specifically as the activities which determine the priority of actions within local authorities. These activities are conducive to achieve sustainable development (SD) through socio-economic growth and to minimise the destructive conflicts among the intra and intergeneration needs during the lifecycle of a public building project: conceiving, developing, executing, and finishing (Munasinghe 1993, Langston and Ding 2001, Wideman 2004). There is no specific guidance for how to apply sustainable principles at an operational level. The application of sustainable development in practice depends on the local context. Additionally, the sustainable development needs an understanding

of the interconnections between social, economic, and environmental aspects of activities at a public building. Therefore, the local authorities demand a close interaction among key stakeholders to achieve the goals in complex situations in the public building management. The pattern of interactions between stakeholders is also important for the project performance, which potentially influences the use of construction technology and local economy growth (Olander and Landin 2005, Morgan 1990). The successful delivery of the sustainable practices within the public building project should focus on the different levels of local authorities to embrace the decentralisation principle of sustainable development in developing countries (UNCED 1992, World Bank 1993, ICLEI/CSD 1996).

In the last few decades, there has been well-documented evidence that the performance of the public building projects by the Indonesian local authorities has neither met the expectation of the stakeholders involved nor demonstrated sustainable practices. This mediocre performance impacts the competitiveness of the building industry; hence, it would require a strategic approach to address these fundamental, structural and cultural issues.

The concept of strategic approach refers to military terms: strategy and tactic, with historical reference to human warfare and development of states. With regards to human resources management, strategic approach is defined as "a developing process that is formed, and which changes according to the events within the organisation and environment" (Lojié, Škrbié, and Ristié 2012:47). Based on etymology, a strategic approach originally comes from *Atenas de Clastenes* (CIARIS 2007). Strategy means art or science related to coordination and combination of strengths; meanwhile, tactic means the skill to reach an end (CIARIS 2007). At the operational level, the strategies have long-term effects and are carried out through stakeholders' interaction to tackle some tasks or problems in a particular location and period of time. Tactics are dealing with a time schedule with limited objectives and short-term time scales. Strategies address "the diversity of short term needs and concern", due to the context dependent nature of sustainability practices; therefore, there is a need to consider multiple perspectives of the stakeholders in the local authority (Munasinghe 1993:3). Thus, the diversity context in local authority can be a challenge and also opportunities to

conveyan achievable strategic prescriptions to enhance sustainable practices in public building management.

A strategic approach in this research refers to a specific strategy, to stimulate a competitiveness of public building projects at different levels of local authorities. The strategic approach should be detached from the old practices and provide a fresh idea for future sustainability by learning from past experience. Therefore, the Framework of Sustainable Dyanamic Capabilities developed in this research will provide a novel strategic approach in public building management. As an attempt to operationalise the strategic approach, CIARIS (2007) suggests a diagnostic process to formulate a strategic approach that should be concerned with the actual needs of stakeholders, particularly at the front line of public building management (i.e. local authorities: procurement units, consultants and engineers). The other key stakeholders (end-user of the buildings and contractors) can determine the impact of public building management and to examine its multi-dimensional aspects and interaction among them. In addition, the other factors to be considered include; level of authority and the roles of stakeholders, attitude of local leaders (force ratio), and future challenges and risks of the projects to be dealt with overall performance of the public building projects. However, developing a strategic approach to enable sustainable practices would depend on the local priorities, goals and success criteria, which are dynamic and influenced by the expectations of various stakeholders involved in the procurement of public buildings.

Fundamental differences between developed and developing countries bring different approaches to the implementation of sustainability practices. Since the publication of the Bruntland's report (1987), most developed countries have been reforming their government policies on sustainability issues. That reform addresses country specific development of strategies as reflected by their needs and capabilities. Generally, developed countries are concerned with maintaining standards of living, while reducing resource depletion and environmental damage, whereas developing countries tend to focus on the sustainable provision of basic human needs, such as the availability of drinking water and shelter (Cole 2005, Manning 2001). Public buildings would be one important part in supporting people's activities and at the heart of infrastructure development. Building construction projects consume approximately one

third of energy consumptions in the world or about half of total energy used by consumers (International Energy Agency 2007, Plank 2008, Murphy 2013, Jayan 2014).

In recent decades, Indonesia has been distinguished as one of the successful emerging economies (World Bank 2011). The Indonesian construction sector has grown between 2004 and 2010, to a value of approximately US$ 120 billion per annum. In Asia, it takes the second place after China (Ministry of Public Works 2011, 2013). However, few major contractors dominate 65 per cent of construction works, causing imbalances in the construction industry market. Also, the construction activities are particularly concentrated in big cities such as Jakarta and other cities in Java Island (Pamulu 2010; Ministry of Public Works 2011, 2013). Indonesia has seen progressive improvement of its macro economy since the crisis period in 1999. This improvement was indicated by a stable economic growth of 6.46 per cent per annum (World Bank 2011). In the two decades after crisis, Indonesia has developed a large market of construction which is valued at more than 1,200 trillion IDR for infrastructure development (Suradji *et al.* 2007). This is an opportunity and challenge for the Indonesian construction industry to develop a capacity building programme that elevates their competitive advantage.

Dependency of the public building projects to the Indonesian New Budgeting System (Decentralised Budgetary) is still an obstacle in development practices. Although the construction business seems attractive and prosperous, regional construction firms still face difficulties due to the change in policy of Reformation Order in 1998. The regional construction firms have had a low profit margin and low competitiveness (Pamulu 2010). The state auditor's report from State Procurement Good and Services reported deviation between plan and implementation of budget. The most important deviation included reduction of volume of works, over payment, over spending on the budget, not meeting the specification of materials, fraud procurement, inflated mark-up prices and unfinished works (LKPP 2011). In addition, more than eighty per cent of cases of state procurement fraud occurred at local rather than central government level.

The regional contractors that make up ninety-five per cent of Indonesian contracting firms (BPS 2011), often show unsustainable practices, resulting in building failure and

defects. At project level, the contractors do not have a systematic monitoring approach to the project progress, and do not produce proper documentation between the client, contractor and supervising consultant during project executions. Further, there is no comprehensive approach to evaluation of buildability and quality of both the process and the product. In fact, between 2008-2013, regular state investigation of public building projects' accountability has led to some prominent court cases of disputes at different levels of authorities. At the same time, the Indonesian economy is currently growing at a rapid rate, generating local construction works since the economic boom in South East Asia in 2004. The unsustainable practice in public building management at different levels of authorities has hampered competitiveness of local building industry.

The key barrier to sustainable practices in public building management may be due to a lack of capability at the local authority level to implement a decentralised system of public building procurement (LKPP 2011)**.** Being an archipelagic country brings a significant challenge to the decentralisation of the public building management at the lowest local authority level. The disparities exist among public building stakeholders, in terms of the capabilities of practitioners and local authorities. Most public building activities still concentrate in the most populous area, Java Island. Simultaneously, the public sector is influenced by political climate, which constantly changes. Thus, developing a strategic approach to address this complex and dynamic problem would require an appropriate theoretical framework. Following a thorough literature in strategic management domain, the dynamic capabilities framework was identified as the appropriate framework to explore and understand various influencing factors in the public building procurement.

The research question that this research intends to address is:

> How can different levels of local authority enhance the sustainability of building management practice through the adoption of appropriate strategic approach?

This research question can be divided into sub research questions:

- What are the current practices of public building management?
- What are the strategic approaches in relation to obtaining project success?
- Who are the key stakeholders? How can they be brought together to support strategic approach?

- What should they be ‘measured’ against? How can their relationships be aligned to support strategic approach?

Due to resource limitations, this research considers only the critical phases of the project life cycle, from pre-and post-activities of procurement, tendering process, construction execution stage until decommissioning of the public building. The project’s major tasks in project life cycle can provide an indication of satisfaction of key stakeholder’s interaction (i.e. local authorities, contractors and end-users (building occupant)). Public building management is a complex process of conflicting interests and interaction amongst stakeholders. These stakeholders’ interactions influence the project performance in various activities, for instance in the early design stage (Wallace 1987, Gameson 1992, Essa 2008), a briefing process (Yusuf 1997, Kao 2004), or in the project management during the execution stage (Loosemore 1996, Pamulu 2010). However, public building management rapidly changes in terms of local political climate or uncertainty during the project executions. The capability of local authority to overcome the disparities of resources. That capability offers the direction toward a strategic approach to enhance project success. A review of literature in strategic management suggested that the dynamic capability framework represents a way to explore the issues surrounding management of public building projects and can offer insights for potential improvements. The dynamic capability framework was rooted in the conceptual development of management capability and organisations in resource based view (Schumpeter 1943, Penrose 1959). Teece, Pisano and Shuen (1997:513) argued that the dynamic capability framework concerns “framing the strategic issues” and emphasises efficiency. In strategic management, dynamic capability theory is a tool to understand the competitive advantage of organisations (Tondolo and Bitencourt 2014). Hence, the process through dynamic capability will affect the organisational resources and capabilities. Finally, as Teece, Pisano and Shuen (1997) stated, competitive advantage requires an ability to exploit the internal and external specific capabilities towards innovation. This research engages with a set of strategic approaches that enable the local authorities to deal with environmental changes and the competitiveness of the construction industry. Thus, this research will apply the dynamic capability framework to determine the strategic approach that brings the project success.

1.2 Aim and Objectives

The research aims to develop a framework that will help local authorities to enhance sustainable practices of the Indonesian public building management at different levels of local authorities. It seeks to obtain an in-depth understanding of the different patterns of interaction between local authorities, contractor and end-users by the following means:

(1) to explore the perception of different stakeholders with regards to sustainable practices

(2) to develop a conceptual framework based on existing literature in the domain of strategic management and dynamic capabilities.

(3) to identify key factors for the development of policy for sustainable building management

1.3 Research Design

In order to address the research question, and to satisfy the interpretive paradigm, ontological and epistemological assumptions, this research adopts qualitative methods. Three cases of public building projects were used to examine the phenomena of sustainable practices in the context of public building projects at three different levels of Indonesian local authority. The data were collected form a series of semi-structured interviews with public building practitioners, such as public building investigators and engineers, local consultants and contractors, local authorities that govern public building project's management, and construction service development board (LPJK: *Lembaga Pengembangan Jasa Konstruksi*). In each case, the interviews were also supported with related project documents, such as procurement documents, building project master plans, minutes of meetings, design drawings, project execution reports, government regulations in public buildings, and accompanied by field observation (i.e. site visits). The whole research components are depicted in Figure 1.1.

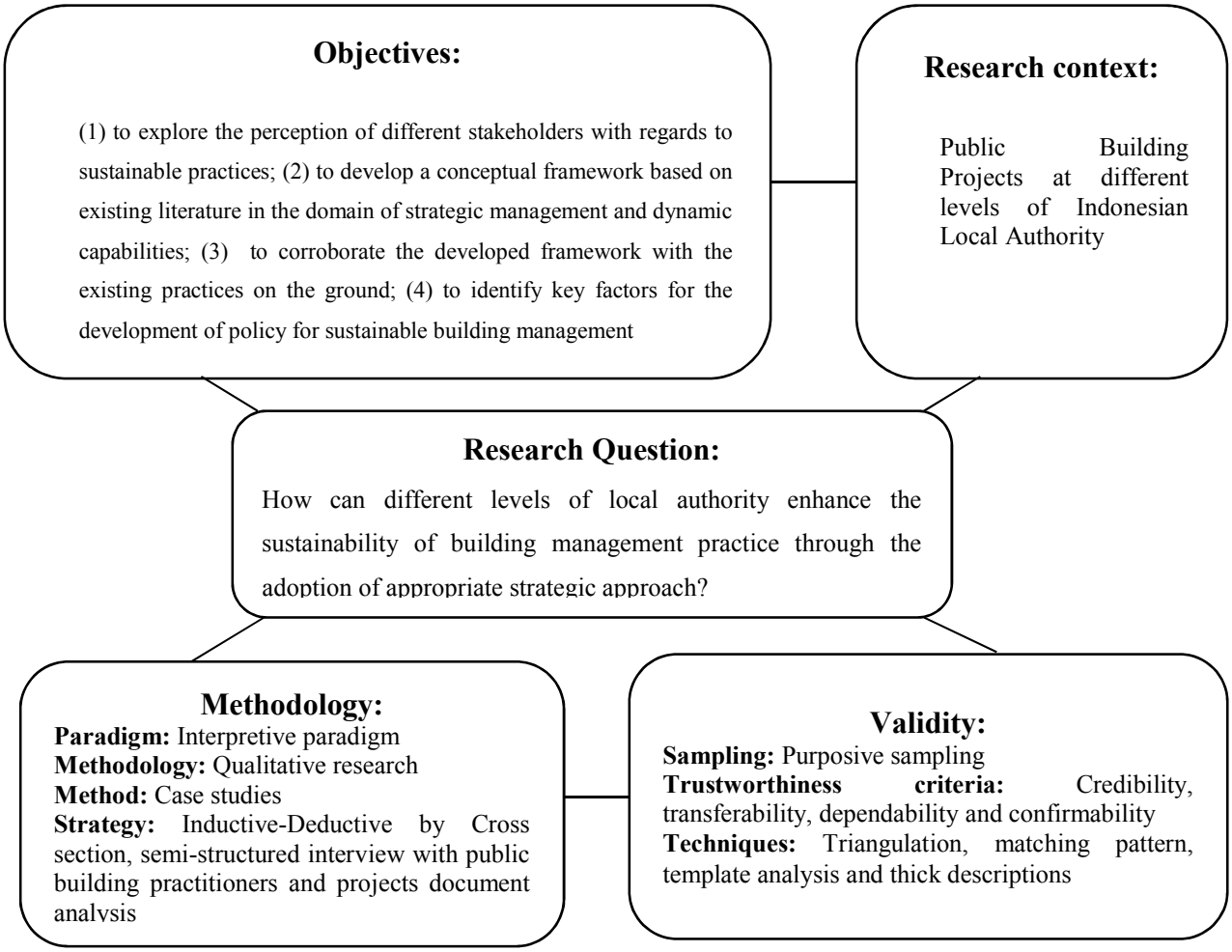

Figure 1.1. Research Component (After Maxwell 1996)

1.4 The Significance of Research

This research examines the strategic approach to enhance project success through sustainable practices in public building management at different levels of local authority. An observation of historical investigations has identified that public building projects in Indonesian local authorities do not fully meet the stakeholders' expectations and demonstrate sustainable practices. The literature of construction industry performance confirmed that sustainability practice has a significant impact on profitability and the environment (Tan, Shen and Yao 2011). Nevertheless, the performance of Indonesian construction industry in this respect is affected by productivity problems. The productivity problems have been identified as; lack of materials, rework due to design changes, interference of worker and "absenteeism"

(Kaming *et al.* 1998:131). Further, lack of motivation, whether due to psychological issues (Olomolaiye and Ogunlana 1988) and money-oriented issues (Mackenzie and Harris 1984), also influences performance. However, this project focuses on the local stakeholders' role, in terms of enforcement or influence to sustainability practice in general rather than project productivity itself. The findings therefore provide a qualitative analysis by a strategic approach based on the dynamic capability framework and interaction among key stakeholders during the life cycle phases to enhance project success. However, the interaction among key stakeholders has a pattern, which influences the project performance. Due to multiple interests, the stakeholder's interaction in public building projects is dynamic and complex (Olander and Landin 2005). Therefore, there is a need to create a simple tool which is able to illustrate the dynamic interaction between key stakeholders in a diagrammatical manner. Thus, the interaction model of LACU (Local Authority, Contractor and end-Users) reflects the real impact of interactions on public building performance as managed by local authority.

The analysis method through different levels of local authorities has not been used in previous research in public sector management (e.g Baretto 2010). This research adopts a multidisciplinary approach by merging data or concepts from local government study and public building management in an Indonesian context. Thus, project management with Indonesian nuances becomes the focus in the research, as detailed in Chapter 2 and 3.

The research is significant for public building management studies at different hierarchical levels of local authorities. The research findings will provide a novel empirically-based framework for the local authorities to undertake sustainable public building management throughout the project life cycle. This research applies to the interaction model of key stakeholders (LACU Model) to public building project management, to help the auditing of public building performance and to recommend possible improvement of sustainability practice for project success. This research is the first attempt to implement the dynamic capability framework in the public building sector and to study the role of local authority in building management in a rigorous manner.

1.5 Structure of Thesis

The thesis is divided into nine chapters, and then grouped into three parts, including the Introduction Chapter section. The whole section is given as follows (see Figure 1.2):

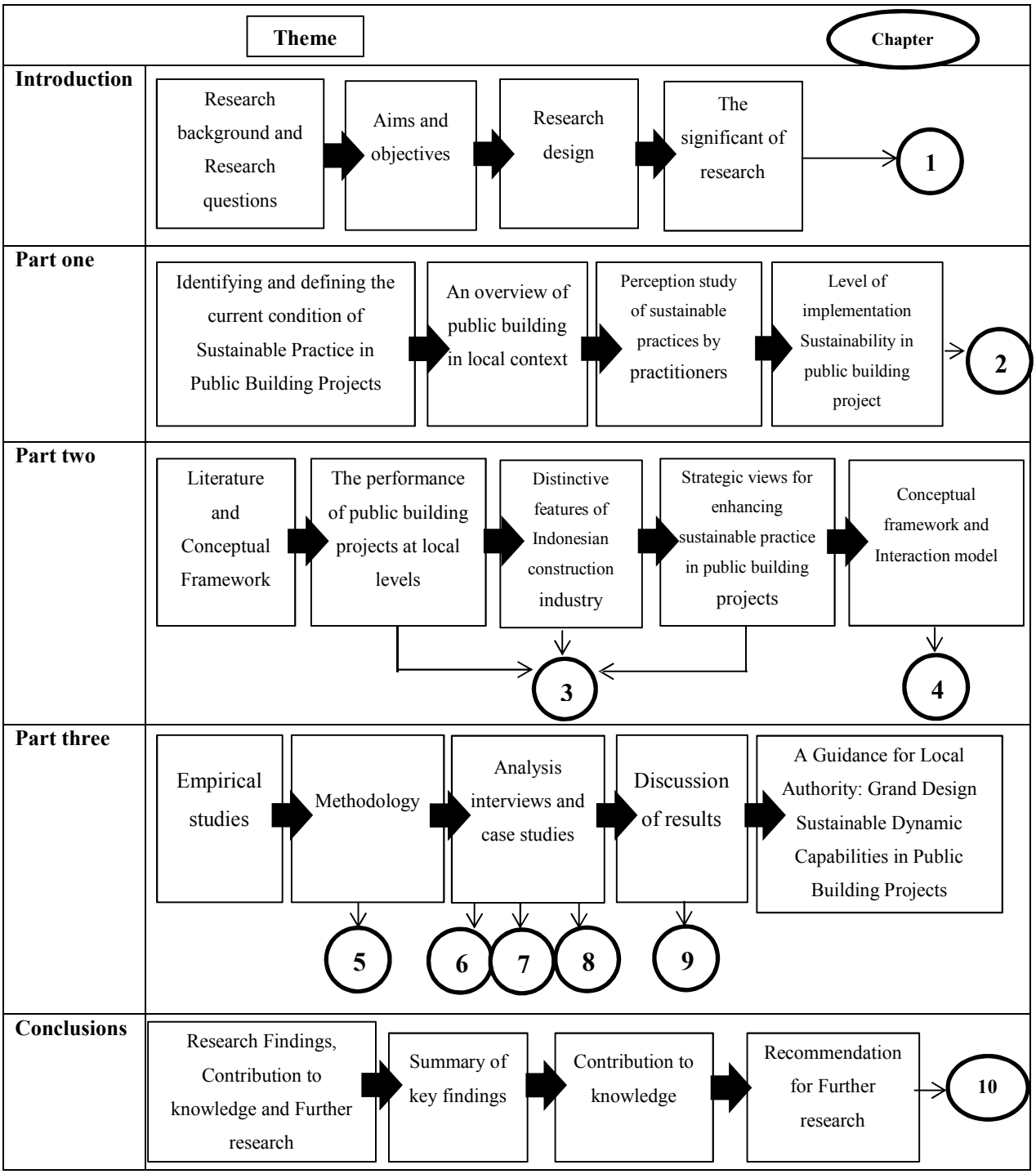

Figure 1.2. Thesis Structure

Part One – Identifying and defining the current condition of Sustainable Practice in Public Building Projects

Chapter 2 Practitioners' Perceptions of Sustainable Practices in Indonesian Public Building Projects

This chapter identifies and defines the current condition of sustainable practices on public building projects that are presented as follows: (i) building construction industry: an overview of Indonesian local authorities, (ii) perception study of sustainable practice in public building projects, and (iii) implementation of sustainability in public building projects. The review concludes that various perceptions in sustainable practices regarding building projects are administered by local authorities. The local authorities would be able to enhance those strategic alliances by encouraging improvement, such as involvement of the private parties into the public sector to stimulate competitiveness in the building construction industry.

Part Two- Literature and Conceptual Frameworks

Chapter 3 Public Building Project Managed by Indonesian Local Authorities: A Strategic View for Enhancing Sustainable Practices

This chapter discusses and evaluates the management of public building projects in Indonesian local authorities. The discussion elaborates the strategic perspective of public building projects managed by Indonesian local authorities. These perspectives are broadly developed from the performance of public building project and the distinct characters of the Indonesian construction industry. Further, the discussion is developed from competition-based strategy, the historical performance of public building, and the environmental aspects due to potential market, natural phenomena, demographic pattern, development experiences, and key stakeholders. The chapter provides a strategic view of sustainable practices for enhancing project success.

Chapter 4 Conceptual Framework and Interaction Model

This chapter establishes a conceptual framework and interaction model for assessing successful indicators in public building projects at different levels of local authorities. The framework is established by utilising the components of the dynamic capabilities view and adapted to the sustainable practices, which are captured from practitioners' best practice in public building projects' performance. Along with the framework, the interaction model is employed as a tool for local authority to determine the interactions between parties when undertaking their tasks throughout the project life cycle in the public building management. The assumption of conceptual framework is verified from ontological, epistemological, and methodological perspectives that are used to enhance dynamic capability theory in public building management.

Part Three- Empirical Studies

Chapter 5 Research Methodology

This chapter develops the research methodology in order to examine the conceptual framework and interaction model for public building projects at different levels of local authorities. To respond to the aim, this chapter encompasses three sections: research strategy, data collection, and data analysis. Considering the methodology, this qualitative research will be based on interpretive paradigms. The research methodology concerns the individual interpretation of the event. In regards to strategy to achieve the research questions, this study adopts a phenomenological approach through semi-structured interviews and case study method.

Chapter 6 Results and Analysis of Interviews

This chapter presents the results and first analysis of the three case studies of public building projects at Indonesian local authorities. In light of the research strategy, the interviews with twenty-four key stakeholders were used to establish an in-depth understanding of applicability of dynamic capability in public building management.

Chapter 7 Analysis of Case Study: Sustainable Practice of Public Buildings at Different Levels of Local Authorities

This chapter presents multiple case studies of the application of sustainable-dynamic capability framework in public building projects. The analysis demonstrates how different levels of local authority can enhance the sustainability of building management practice by the adoption of an appropriate strategic approach.

Chapter 8 Application Framework and Interaction Model LACU

This chapter presents the application of the dynamic capability framework, and the interaction model of LACU. The analysis discusses the implementation aspect of dynamic capabilities through the case studies and attempts to resonance a strategic approach based on the successful project cases. Based upon the empirical studies, the initial framework is developed to adapt the real condition of the cases. Thus, to address the research aim, the developed framework of sustainable dynamic capabilities (FSDC) demonstrates the key stakeholder interaction by simulating the LACU model. The interaction model of LACU maps stakeholders in public building management at the different levels of local authority.

Chapter 9 Discussion of Results

This chapter draws together the results of three empirical studies from Chapters 5, 6 and 7. The results are also discussed through the Framework of Sustainable Dynamic Capabilities (FSDC) with the empirical evidence in public building project at different levels of local authorities. Consideration is also given to the factors influencing strategic approach for enhancing sustainable practices.

Chapter 10 Conclusions

This chapter provides an overview of the thesis and key findings. The contribution to knowledge is summarised and recommendations for further research are also provided.

CHAPTER 2 Practitioners' Perceptions of Sustainable Practices in Indonesian Public Building Projects

2.1 Introduction

This chapter describes the current condition of sustainable practices on public building projects in Indonesia. This chapter discusses a review of literature of sustainability in local public building project and elaborates the preliminary data from public building practitioners. The chapter analysed the perceptions of practitioners in enabling sustainable practices at public building project. These perceptions will measure the implementation level of sustainability as addressed by research question what are the current practices of public building management. Furthermore, the chapter elaborates the evidence from the field of public building practices that are further discussed in Chapter 3. In addition, this chapter attempts to identify the strategic factors of project success based upon the intensity of interaction among public building stakeholders, by the existence of public building management based on dynamic capability that is discussed in Chapter 4. This chapter is comprised of four sections. The first section describes the need of this study; and the second section then discusses the practitioners's perception on sustainable practices in public building project. The third section analyses the implementation of sustainability by practitioners, which leads to the conflicting discourses on sustainability concept in public building projects. Finally, the summary of this chapter is presented.

2.2 The Building Construction Industry: An Overview of the Indonesian Local Authority Context

Following the economic crisis in 1998, the Indonesian construction industry has demonstrated a steady growth since 2004. Regional autonomy for Indonesian local authority is an area of major structural and policy change. While the central government implements regulations on building construction, policies of local authorities on building management vary. This has affected the construction industry, including sustainable practices.

The local authority is an excellent example of the presence of various interconnected stakeholders. Stakeholder groups with differing expectations attempt to influence the formulation of strategy. The electorate can influence the situation by allocating power to political parties. They, in turn, are subject to their own internal pressures from their groups with differing expectations and must reconcile their policies with the views of opposition parties and the administrators in the local authorities.

It is useful to carry out an analysis of the strategies adopted by companies in building construction projects (Johnson and Scholes 2002). After the economic crisis in 1998, the succession of presidents and cabinets has influenced the development of policies in the construction industry. Then, in 2002, the government released Act 28/2002 regarding Building Construction Regulation, which was supplemented by the Government Regulation Act 36/2005, which provides operational guidance. The objectives were two-fold; first, to enhance the function of building through construction in harmony with the environment, i.e. the construction of buildings must comply with the code of conduct, which ensures safety, health, comfort and the preservation of the environment. Second, it is to enhance the legal aspects of building construction. According to the building construction regulations (Act 28/2002), local authorities have the power to regulate the construction process, and stipulate the building control system for the key stages of design, approval, construction and maintenance. An important development was the Presidential Decree (*Keputusan Presiden/ Kepres*) No. 80 in 2003, regarding the provision of government procurement of goods/services. However, after more than a decade of reform in the construction industry, there is still limited evidence on the significant implementation changes resulting from the regulations, let alone sustainable practices which were achieved by the local authorities. Thus, this study aims to examine the current sustainable practices from the local practitioners' perceptions.

2.3 The Perception of Sustainable Practice in Public Building Projects

In order to provide an in-depth discussion and understanding of the practitioners' perceptions regarding sustainable practices in public building projects, a questionnaire survey and in-depth interviews with ten practitioners from local authorities, were conducted in the study. The survey was completed by in-depth interviews based upon

the sustainable principles that were attributed by practitioners' experiences, which have been implemented in those building projects addressing social, economic and environmental factors. The attributes of sustainable practices was implemented and adopted differently by practitioners' practices. Therefore, the analysis of the practitioners' perception can contribute to the depiction of the current condition of sustainable practices across decades. The analysis can reveal the challenges for implementing sustainability principles in Indonesian public building projects by highlighting areas, which have not been given attention.

Respondents included a project manager, a property investor, a procurement unit, and civil engineers (3), contractors (2) and architects (2). Most (8) have considerable experience between 20-25 years in building projects in local authorities, and the rest have experience of between 10 and 20 years. Eight of the respondents were professionally licenced in building construction by Professional Engineer Association. The respondent's identity can be seen in Table 2.1.

Table 2.1. Respondent's Identity on Perceptions Study

Practitioners	Code Name	Geographic based	Range of Age	Educational Background	Experience (years)	Licence
Structural Engineer	NUJ	Semarang	45-54	Doctoral	20-25	License
Procurement	RUA	Semarang	45-54	Master	20-25	License
Contractor	AND	Surabaya	45-54	Master	20-25	License
Architect	TRI	Semarang	55-64	Master	>25	No-License
Architect	NUG	Semarang	55-64	Bachelor	>25	License
Contractor	HTJ	Jakarta	55-64	Master	>25	License
Structure Engineer	HIN	Semarang	45-54	Master	>25	License
Project Manager	EWN	Semarang	45-54	Master	20-25	License
Property Investor	RBK	Jakarta	35-44	Bachelor	10-15	No-License
Civil Engineer	HTC	Semarang	35-44	Master	10-15	License

The questionnaire asked respondents to identify the level of sustainability implementation, from their experiences, on a scale 1 to 5, where 1= very low, 2= low, 3= medium, 4= high and 5 = very high.

Reliable constructs are inter-correlated and are measured in the same latent construct or category, by different observers at different occasions (Hemmersley 1992, Hair *et al.* 1995). Some researchers point out these criteria to assess validity. These validity criteria include the impact of research setting, value of the researcher and the truth of the respondent (Hemmersley 1992, Silverman 2001). Furthermore, by the logic of qualitative research, Silverman (2001) points out two validation methods: triangulation and respondent validation. This research attempts to validate the findings by the respondent validation through in-depth interview and additional knowledge from supporting documents including the relevant project reports, facts from observations, photographs and credible newspapers.

2.4 Implementation of Sustainability in Public Building Projects

The debate on the concepts of sustainability is becoming extensive and pervasive to every single corner of the globe. The United Nations formed a consensus about the issue in 1987, commonly rehearsed as development, which meets the needs of the present without compromising the ability of future generations to meet their own needs, with the triple bottom line of social, environment and economic objectives.

Some literature regarding sustainability across the globe indicates particular limitations in its implementation. There is a lot of literature that touches the issues of sustainable practices in general. However, there is little literature that examines practical building project implementation from the aspect of appraisal to commissioning stages. While the sustainability process is inherently dynamic, creating changes through continuous learning and adaptation (Mog 2004), there is a need for it to be operationalised explicitly for successful implementation. Moreover, Boyko *et al.* (2006) argued that some literature of sustainability issues is unclear about when they should be addressed, how different stakeholders should be engaged, who is to act as decision maker and what influences them. Meanwhile, Epstein and Buhovac (2010) argue that organisational culture should be aligned to sustainability principles in order to raise the awareness of sustainability performance and goals and, in the latter, motivate sustainable decision-making.

Sustainability tends to sustain the human species, harmonising with nature and local culture, and giving spiritual value. “Sustainability goals can only be achieved if new resources” of cognition and practitioners inform the construction activities (Wetherill *et al.* 2007:78). These goals “will have to come from the situated and contextual” consideration of sustainable principle and “local practices developed across organisational, professional, and multicultural boundaries” (Wetherill *et al.* 2007:78).

Hill and Bowen (1997:237) argue that sustainable construction should be used to describe “a process from planning, design stage and continues after the construction team have left the project site”. However, construction activities also involve the serviceability management of a building, deconstruction and recycling of resources to minimise the waste stream provided by demolition works. The holistic process of sustainable construction encourages the equity of economics and harmonising ecology

and judicious use of natural resources. A number of principles pointed out by Hill and Bowen (1997:223) would encourage the sustainable construction industry. These principles are categorised into the "three pillars of sustainability", namely; economy, society, and environment, with "over-arching process-oriented principles", which proposes that the guidance be followed in prioritising of each pillar of sustainability.

It is important to give an indication of how these might be used in practice. As a starting point, this research will be adopting the themes of Hill and Bowen (1997) as indicated in Table 2.2.

Table 2.2. Themes of Sustainable Practice in Building Construction (Adopted from Hill and Bowen 1997)

Themes	Principles of sustainable construction
Social	1: Human quality of life improvement by alleviation of poverty (IMPRO) 2: Adaptable planning by local human institutions and technology (PLANA) 3: Health and safety (SAFEH) 4: Skill of the people who participate in the project (SKILL) 5: Avoiding negative social impacts of construction work (SCOST) 6: Social benefits during the construction process (example: employment opportunities) (SBENEF) 7: Equitable compensation for environmental change (CENVT)
Economy	1: Financial affordability (AFFOR) 2: Employment opportunity (EMPLOY) 3:Equitability of full-cost accounting and real-cost pricing regarding efficiency in the process. (COSTR) 4: Enhance competitiveness in the market place by adopting policies and practices that advance issues of sustainability. (COMPET) 5: Choose environmentally responsible suppliers and contractors who can demonstrate environmental performance. (RESEN)
Environmental	1: Innovation of resource-savings methods regarding material and energy consumption. (INOVA) 2: Reduce the use of the four generic resources used in construction; energy, water, materials, and land, at each stage in the project life cycle. (REDUCE) 3: Maximise resource reuse, and/or recycling to reduce the waste. (REUSE) 4: Recycle (reduction of raw materials used in new products). (RECYCLE) 5: Use renewable resources in preference to non-renewable resources. (NONRE) 6: Minimise air, land and water pollution. (MINIM) 7: Create and use eco-friendly products in construction, concerning human health and safety and minimising environmental degradation. (ECOFR) 8: Conservation efforts by conserving life support systems, conserving the biodiversity of plants, animals and other organisms. (CONSER) 9: Minimise damage to sensitive landscapes, including areas which are valuable from a scenic, cultural, historical, or architectural point of view, and minimise intrusion into wilderness areas. (MINDAM)

2.4.1 Results of perceptions study

The results of practitioners' perceptions study are divided into two categories of respondents according to their job roles. The two categories are considered by major role as such managerial and technical. The first group contains the project manager, property investor and procurement unit. The second group contains the civil engineers, contractors and architects. Figure 2.1., presents the perception of the level of sustainability implementation in building projects in Indonesian local authorities based on the experiences of those in the first group. From the shape of the responses on the spider diagram, each group of respondents appears to have the same perception to the other. There is a good level of consensus (response levels of 4 or 5) in the areas of quality of life improvement through the alleviation of poverty, adaptable planning, skills of the people who participate in the project, financial affordability, use of environmentally responsible suppliers, reuse practices and reduction of waste.

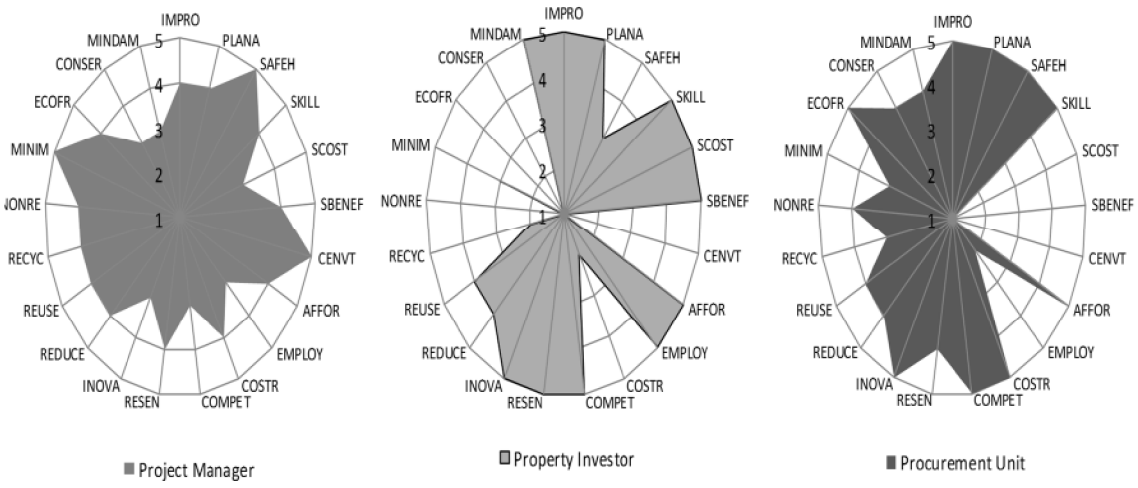

Figure 2.1. Level of sustainability implementation: perceptions of project manager, property investor and procurement unit.

In addition, another response level of sustainability by public building practitioners is very low to medium (scale 3 to 1) which likely indicates that the various perceptions about sustainability implementation. Therefore, the different responses exist between those from the Project Manager, Property Investor and Procurement Unit. It is argued that different building practitioners should collaborate to gain project success. In fact,

there is a gap between property investor and management party (Procurement Unit and Project Management) regarding to company profit orientation and experience of public building's stakeholders .

In-depth interviews with the first group of respondents (project manager, property investor and procurement unit) revealed that the implementation of sustainability practices faces obstacles because of the approaches to budgeting by central and local authorities, which has been seen as excessively rigid, short-term and unreliable in terms of cash flow. Another problem is a lack of flexibility in the use of unit prices for building construction. These lead to behaviours that are not compatible with sustainable practices.

The questionnaire responses of the second group (civil engineers, contractors and architects) are given in Figure 2.2. to Figure 2.5. This group shows a lower level of consistency in comparison to those from the first group. In particular, it can be seen that the architects have a generally negative perception of the implementation of sustainability.

The interviews revealed different perceptions by the engineers, contractors and architects. The engineers identified challenges to achieving sustainable practices relating to disparities in construction skills and natural resources in each region among Indonesian local authorities. It can be argued that cultural diversity of this archipelagic country influences the characteristics of human resources. There is a shortage of professional engineers and skilled labour. Recently, quoting from the data of the National Construction Service Development Board (LPJKN: *Lembaga Pengembangan Jasa Konstruksi Nasional*), Indonesia has around 30,000 professional engineers (Suradji *et al.* 2007) and 6,340 registered skilled construction workers (BPS 2012b). There were also concerns that local leaders should be more committed to environmental protection in public building practices.

Two contractors (respondents AND and HTJ) have a different perception of sustainable practices in building projects. The contractors stated that there have been significant innovations in the use of materials in the last decade. Nowadays, in the construction market, materials technology provides a wide range of options with competitive prices and a wider choice of vendors. Although contractors have good

access to the appropriate quality of material to meet the specifications in building projects, they are also facing problems concerning the disparity of natural resources in some local regions. They are required to comply with technical specifications, which do not consider the availability and viability of material resources. Importing materials from other regions leads to additional costs. The contractors argued that the design and the contract should consider these issues.

The architects (respondents TRI and NUG) stated that architectural design always considers sustainability. Nevertheless, policy makers in particular situations lack commitment to achieve the relevant master plan, which incorporates urban sustainability. The architects have a different view in comparison to that of the civil engineers; the architects have a more normative lens, compared with increasingly detailed orientation of the engineers. This situation depicts architects' position on the general planning, which is challenged by leadership problems within each local authority. The architect's idealism is eventually defeated by the knowledge and experiences of the local leaders. On one hand, most of the engineering adjustment is undertaken based on budget absorptions rather than technical issues accomplishment. On the other hand, the civil engineers and contractors are still facing similar practical problems on the ground.

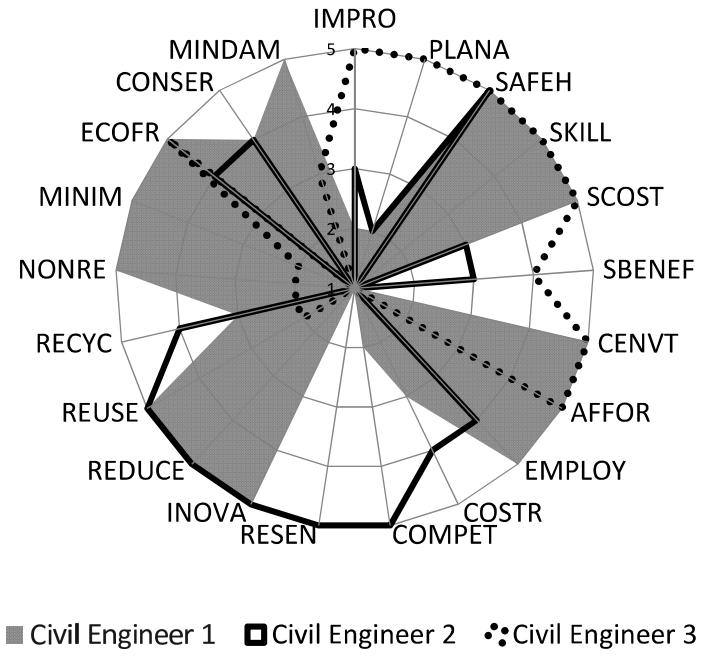

Figure 2.2. Level of sustainability implementation: perceptions of civil engineers

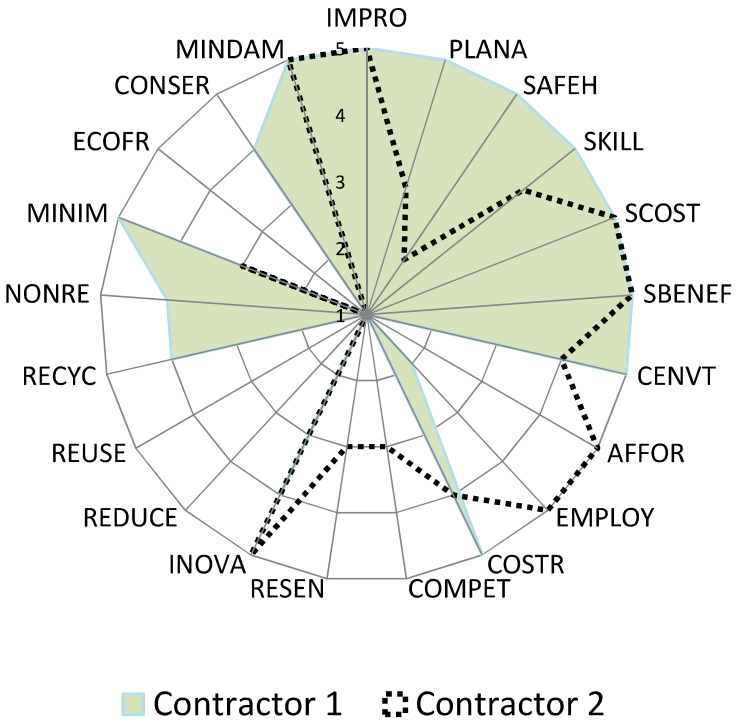

Figure 2.3. Level of sustainability implementation: Perceptions of contractors

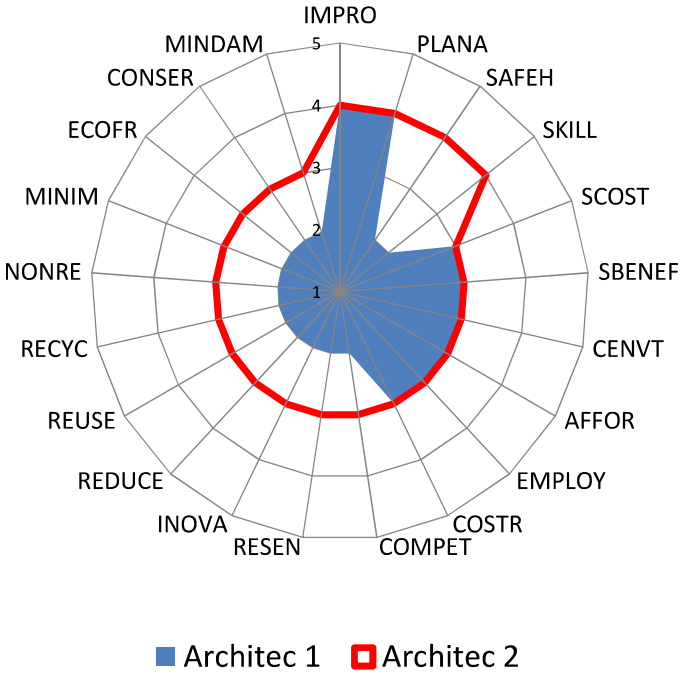

Figure 2.4. Level of sustainability implementation: Perceptions of architects

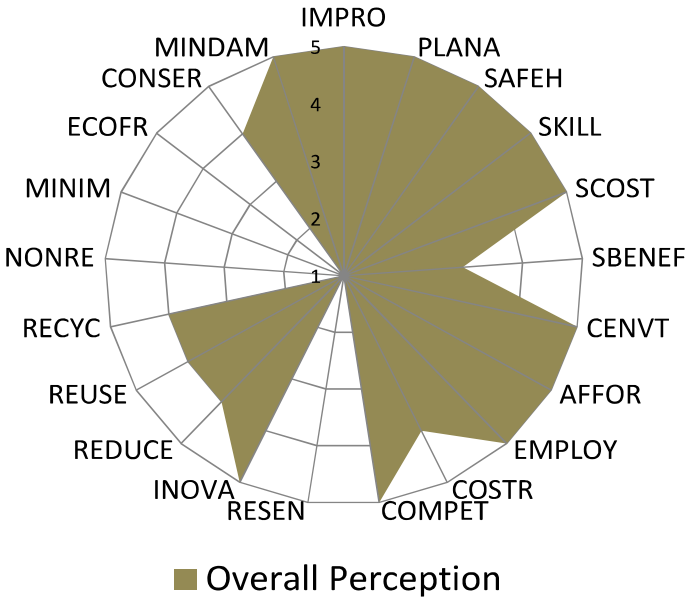

Figure 2.5. Level of sustainability implementation: Overall Perception

Figure 2.5. presents the average scores across all respondents. The questionnaire survey demonstrates that 14 of 21 indicators suggest that the principles of sustainability

have been implemented in the building projects. Some factors have different influences on each type of practitioner. The environmental aspects appear to attract less attention by the practitioners when compared with social and economic aspects. Reliability analysis (see detail output in Appendix 2-1) of 21 items indicators were demonstrated that reliable attributes for economy are IMPRO, PLANA, SKILL and SBENEF* (Cronbach-α= 0.811). For social attributes: EMPLOY, COMPET and RESEN (Cronbach-α= 0.803). For environmental attributes: INOVA, REDUCE*, REUSE*, RECYC, NONRE, MINIM and CONSER (Cronbach-α= 0.816). However, the attributes, which are marked with an asterix (*), identified from in-depth interview that social benefits, principles of reduce and reuse are not implemented in the building projects. It means the practitioners agree that those sustainable parameters are important for the projects but in particular aspect with minimum performance through the planning phases.

This research outcome emphasises the diversity of practitioners' perception in accommodating sustainable practices in their job role for achieving the project goal. Their perception depicts a shift of emphasis to cooperation to form strategic alliances. In fact, in-depth interviews revealed that practitioners have a similar technical guidance in terms of technical requirement when it comes to deal with sustainable practices in public building projects. Although practitioners on the same technical guidance, there are pre-requisites to achieve the sustainable planning into action, by addressing the consistency of the decision-making process conducted by local leaders. Undoubtedly, each member of practitioners (first and second group) has different characteristics and powers to achieve sustainable practices. It means the building projects are unique cases, thus this situation becomes a basis to convey strategic framework through the control of stakeholders (local authority, engineers, contractors, property investor, project management and procurement unit).

However, in this study, it is still difficult to suggest the best recipe to enhance sustainable practices in public building project. Although the perception study can illustrate the level of sustainability implementation, the behavioural aspect of public building still lacks clarity regarding how project success will be achieved. Sustainability indicators as demonstrated by the results already gauge the current practice by the

practitioners. In fact, between 2004-2014, public building developments are significantly changed by the local leader, for instance: the case of local developments at city of Solo in Central Java, under Mayor Joko Widodo; City of Surabaya in East Java, under Mayor Tri Risma Harini, and City of Bandung, in West Java under Mayor Ridwan Kamil (Widodo 2015, World Cities Summit 2015, Hove, McCawley and Baskoro 2014, British Council 2014, Rachmawati 2013, Baker 2013, BBC 2011). Different regiosd means different needs and capabilities for the local development. The local leaders have become the most influencing factors in this regard. Thus, the role of local authorities to deliver a strategic approach must be a priority upon the local distinctive features.

2.5 Summary

This chapter has discussed the practitioners' perceptions of sustainable practices in Indonesian public building projects. The discussion has highlighted the current condition of sustainable practices on public building projects at local authority's levels based on the data from ten building's practitioners.

There are three findings among discussion of sustainability issue in Indonesian public building management throughout this chapter:

1. Building construction regulation as a driver of sustainable building allow the local authorities a power to regulate the construction process and stipulate the building control system for the key stages of design, approval, construction and maintenance. However, after more than a decade of reform in the Indonesian construction industry there is still limited evidence on the significant implementation changes resulting from the regulations. Whilst the central government implements regulations on building construction, policies of local authorities vary. This has affected the construction industry, including sustainable practices.
2. The practitioners' perception is described by two perspectives: managerial and technical. In regard to the managerial perspectives, there are gaps between contractors (property investor), and management party (Procurement Unit and Project Management) regarding profit orientation and quality standard, where

inability to maintain quality standard still predominantly hampered sustainable practice in public buildings sector. Meanwhile, the technical perspective highlights the disparity among local authorities, in terms of skills and natural resources of building projects. However, the engineering adjustment sometimes lies on the dilemmatic issues between accomplishing the project or performing budgeting adsorption in certain years or each project goal.

3. This chapter illustrates the level of sustainability implementation in public building projects, where the behavioural aspect of public building still lack clarity how project success will be achieved.

In summary, sustainability implementation as demonstrated by the results already gauge the current practices by the public building practitioners. Based upon the practitioners' perceptions, there are indications the needs of a strategic approach in sustainability implementation in public building projects at the local levels, whether managerial or engineering aspects.

CHAPTER 3 Public Building Project Managed by Indonesian Local Authorities: A Strategic Perspective for Enhancing Sustainable Practices

3.1 Introduction

This chapter aims to discuss and to evaluate the management of public building projects by Indonesian local authorities. The discussion comprises a strategic perspective to consider the potential competitiveness from triple bottom views of sustainability, social, economy and ecological perspective. This chapter consists of three discussions. The first discussion about the performance of public building projects managed by Indonesian local authorities, consists of four sections: (i) decentralisation process, (ii) standard code and services of public building, (iii) e-procurement system in public building projects and (iv) the roles of local authorities due to the management of public building projects. The second discussion comprises the distinctive features of the Indonesian construction industry based upon four aspects: (i) market environment in an archipelagic country, (ii) natural phenomena in a disaster area, (iii) the demographic pattern and development experience and (iv) stakeholders of construction industry at the local authority level. The last discussion is delivered as an underpinning theory through a strategic perspective for enhancing sustainable practices in public building projects. The summary presents a general perspective from current practices of public building projects by Indonesian local authorities.

3.2 The Performance of Public Building Projects Managed by Indonesian Local Authorities

Historical phenomena of public sector management emanated from the global economic crisis at the end of the 19th century (in 1997-1999). The conceptual paradigm in the public sector has changed from the political approach to customer-based orientation (Pettigrew 1992). Further, the radical changes after the economic crisis established the New Public Management (NPM), which regards efficiency and

rationality as central values (Christensen 2008). In the local authority context, public sector in the NPM era is governed by "competition-based strategy theory" (Pablo *et al*. 2007:688). In between the period 1999-2010, the Indonesian public building sector faced the same situation. Thus, in order to obtain added-value for public building projects, local authorities need to be more customer-oriented and adopt the competition-based strategy of the New Public Management.

The Indonesian construction industry has been significantly growing after the economic recovery in 1999. Reformation of bureaucracy affected every aspect of development. The democratic reform having decentralised the public administration system, relied on legitimation from constituents, as well as gained their trust, emphasises cost efficiency, effectiveness and accountability in public sector management (Olsen 1988, Weaver and Rockman, 1993, Self 2000, Egeberg 2003). Public sector reform has changed the Indonesian government system into the dilemmatic system of high national expenses (Kaho 2012). The new democratic system has introduced direct elections at the national and local authority levels. The direct election system is mandatory by the reformation order**.** Hence**,** an **"**extra budget" emerges to support the political administrative system. Since the public building sector depends on the new political administrative decision, particularly in budgetary issues, it means the project success significantly depends on the involvement of the key stakeholders in the decentralised system.

A successful public building management after the democratic reform relies on cost efficiency, effectiveness and accountability at operational levels. Based upon the efficiency perspective, public sector should embrace market mechanism, compulsory competitive tendering (CCT), customer-orientation, deployment of competition and the use of contracts (Martin 2005). In fact, the reform of Indonesian public building industry at the local level is far from the competition-based approach. Therefore, in between the period 1998-2014, the disputes in Indonesian public buildings performance demonstrated lack of professionalism and competence, as can be seen in Table 3.1.

Various problems influencing the public building project performance are presented in Table 3.1. These cases indicate a lack of performance in terms of quality of planning, construction execution and maintenance consideration. In all cases above, at the end of

the projects, the end-users cannot enjoy the advantages of buildings functions. Most of the cases are solved by law enforcement rather than attempting to find a technical solution, for instance, the case of University Building and Public Office Building in Central Java (Table 3.1. Case 2 and 3). In addition, the lack of capability of public building practitioners at different levels of local authority and various types of the building project also contribute in these cases. As presented in Table 3.1, the exemplary cases identified have different problems by political budgeting and legislation, conspiracy by local authority's staff, who committed corruption.

Table 3.1. Exemplary cases of disputes in Indonesian Public Building Projects on the Period 1998-2014

Case	Location, date	Type of Building	Case problems
1	Hambalang Projects, Bogor-West Java, 2010-2014 (1)	Sport Centre for National Olympics	Corruption by parliament members and Ministry staff
2	Public Office Building, Brebes-Central Java, 2008-2012 (2)	Public administration Office Building	Dispute resolution of construction execution, Corruption, Fraud
3	University Building, Semarang-Central Java, 2010-2013 (3)	Lecture Building and Dean office building	Inexperienced contractor and disputes (rooted from corruption case)
4	Revitalisation of Traditional Market, Jakarta, 2010-2013 (4)	Traditional market building	Competitiveness Traditional Market among proliferation of modern market and retails
5	Retrofit Buildings of Public Mosque, Jepara-Central Java, 2009-2010 (5)	Mosque building	Lack of proper design by rural community (Case Non-Engineered Building)
6	Investigation of Building Failure and defects, Central Java, 1998-2013 (6)	Parliament building, Public health unit, public hospital, bus terminal, public schools, bank office etc.	Accountability of public building projects

Source: (1) www.kpk.go.id (Accessed 2014); (2) Indarto and Hermawan (2011); (3) University X (anonymous) (2010); (4) MBS (anonymous) (2013); (5) Indarto, Hermawan and Cahyo (2010); (6) Hermawan *et al.* (2013)

If effectiveness and accountability are considered as factors in every project success, there is a need to encourage local authorities for creating a strategic role with the hope of enhancing sustainable practices in public building management. Therefore, this research attempts to formulate a strategic approach for enhancing sustainable project performance of public building management at different levels of local authority, as defined in Chapter 1 Section 1.2.

Performance-based initiative in public building projects is a manifestation of accountability in a modern public administration. From the evidence of mediocre performance of public building projects by stakeholders at different levels of local authorities, it has drawn a decentralisation pathway, which still needs to be reconfigured in an appropriate manner (Hermawan *et al.* 2013). Brikenhoff and Wetterberg (2013) point out that performance-enhancing reform should utilise the advantages of leverage in strengthening sufficient incentives and proper monitoring performance by practices. However, political administrative power from local leaders implies the monitoring improvement in this regard. Based on the experience of Indonesian local authorities, there is disparity among regions in terms of local revenue, level of education of registered people, the standard of local income, the local tradition of construction's labour in small contractors (Miles 1997) and ownership of natural resources, which sometimes hamper the capability to support performance-enhancing reform. Therefore, the sufficient capability of local authorities to enforce the local performance in public building performance becomes a key factor in this respect.

Based upon the Indonesian state auditor framework, sustainable performance refers to three factors: efficiency, economics, and effectivity during the project initiative, budget planning, execution and post-construction. Balancing factors of sustainability performance in public building projects still represent a formidable challenge to be achieved simultaneously. These factors also are a pathway of performance-based improvement, whether from decentralisation process, standardisation setting, encouraging result-based management, information system that support the performance monitoring or public participation to indicate the performance of successful assessment level (Brikenhoff and Wetterberg 2013).

The local public building practices at local authority level are discussed to give in-depth understanding of performance through discussion by four relevant aspects. First, the decentralisation process delivers the national responsibility at the different levels of local authority. The separation levels of authority and budgetary proportion illustrate the political-administration among regions. The budgetary performance implies the development of policies locally. Second, the standard code and services of public buildings become directions of the business performance indicator. In light of sustainability performance, the standard code and services become basic tools of consistency in regard to local compliance by the national standards of public building, whether pure technical matter of building construction or budgetary administration. Third, e-procurement system is part of radical change to enhance accountability in public building projects. In light of the decentralisation process, the procurement unit also has a significant role to address the sustainable performance of local public building management. Although the information system reaches a good level of progressive implementation in local authorities, the symptoms of unsustainable practice in public building management have cast a doubt, whether the implementation of e-procurement system really works. Finally, local authorities as regulators have a significant role in influencing and enforcing the system of public building stakeholders for enhancing sustainable practices. Using naturalistic inquiries, this research evaluates the application of dynamic capabilities to enhance sustainable practices in local public building management. The existence of public building projects will be discussed from the historical perspective of authority levels, while the awareness of local leaders to stimulate the standard code and service of public buildings has been brought into focus since reformation order in 1999. The subsequent development of the information system by implementation of e-procurement system at the awakening of the Indonesian construction industry in 2004 will also be considered. The discussion regarding public building performance will focus on the current implementation of sustainable practice and potential improvement by the local practitioners.

3.2.1 Decentralisation process

In the long history of Indonesian politics, the decentralisation process becomes an exercise in the maturation of governing activities in the large regional administration. The historical phases of decentralisation can be seen in Table 3.2. The decentralisation is a political process in the context of social-economic development to deliver the provision of national constitution (UUD45), which aims to improve "general prosperity for the people". In addition, the decentralisation phases is also a mature process of political orders, where public policy making among central and local authorities levels change the direction of Indonesian development, including public building sector.

Table 3.2. Historical Phase of Decentralisation in Indonesia

Source: Wollenberg et *al*. (2009:8-9); Matsui (2003:7); Kaho (2012); Davidson (2015).

Decentralisation has transferred responsibility from national to local government, in both administrative authority and public spending matters (World Bank 2006; Davidson 2015). The issues of responsibility's transfer are also followed with capacity and capabilities of human resources at different levels of local authorities, including public building management. Consequently, the decentralisation process impacts the construction industry. Hence, local authorities receive the mandatory role to govern the authoritarian function greater than central government. For example, Indonesian public building has allocated around forty per cent of state budgeting in the infrastructure sector (BPS 2011). Since 2004-2010, the value of construction significantly increases in local authorities (BPS 2010, 2014). The responsibility transfer from central government to local services as drawn by the decentralised fiscal was delivered throughout fiscal-

equalisation formula in fiscal-balance fund (*Dana Perimbangan*) (Kaho 2012, Firman 2009; Shah and Thompson 2004).

Generally, the local government budget structure consists of three components: local revenue, expenditure and financing budget (Law No. 25/ 1999). Local revenue is generated by locally-sourced revenues (PAD: *Pendapatan Asli Daerah*), fiscal balance funds and other revenues. Meanwhile, the expenditure of local government has two components: direct and indirect expenditures. Indonesian central government has different schemes of fiscal incentives. The financing budget tends to cover the revenue and expenditure activities. Regarding fiscal-balance fund, the local budgeting regulation comprises different allocation fund based on the purposes: sharing allocation funds (*Dana bagi hasil*); general revenue allocation or block grant (*Dana alokasi umum* or DAU) and specific purpose grant (*Dana alokasi khusus* or DAK). Sharing allocation fund purposes to overcome the vertical gaps between central and local government. The sharing allocation reflects the consideration of the central government to local potential resources. There are five local potential resources which are shared in the sharing allocation proportion as stipulated in Law No. 25/1999 (see Table 3.3).

Table 3.3. State Revenue Percentage of Sharing Allocation Funds

Source: Law No. 25/1999

General revenue allocation (DAU) has set the purposes to fill the horizontal gaps among local governments as consequences of revenue disparities from local resources. The goal of DAU is to evolve the financial capacity among local governments (Kaho 2012). There are two hierarchies of DAU based on level of authority: province level about 10 per cent and regency or city level about 90 per cent. Meanwhile, the specific purpose grant (DAK) is the specific transfer to fulfil the special needs of local government that supports the national programme, but out of coverage in general revenue allocation formula. That specific grant's component could be special needs in particular region, reforestation funds, and emergency funds.

The problems of local development emphasise that the local authority budget is predominantly allocated to the state employee payroll. In 2012, there are 11 districts

which allocated the state employee payroll greater than 70 per cent (Kaho 2012). That condition causes the rest of local budget for development programme, which is oriented to the infrastructure facilities, to only be around 9 to 14 per cent (Kaho 2012:287). Thus, the fundamental problem of local public building industry is related with the local state budgetary allocation. Local government budgeting has made it apparent that the focus of the expenditure has been on non-infrastructural development. For instance, a primary concern of the authorities has been the salaries of staff, while resources have not been included to the building strategies as defined by central government. Therefore, local governments need to review and redefine their budgetary objectives, stipulate funds exclusively to the building projects, and avoid financial resources being committed elsewhere.

Currently, all local government building projects are dependent upon funding directly from central government. In order to gain competitive advantage, local development funds need to be generated from within to supplement national funding. Detailed government procedures outline and give local authorities the scope to work and collaborate with public building practitioners and the private sector, and grant them the opportunity to reassess their capabilities in contributing towards building a sustainable model which has outstanding economic, societal and environmental outcomes. However, the current practice of public building management at the local level remains questionable, specifically regarding how effective sustainability creates the value added for the construction industry. In fact, the delegating roles of each local authority level, in terms of local obligations, are including local public building management (Law 32/2014 concerning Local Government). These obligations are still on the regulation level; meanwhile, the public building management at the local level has been overrun at the operational level for more than a decade (1999-2014). Harmonising role among key stakeholders (Local authority, Contractor and End-users) as discussed in this research becomes a consideration by the practitioners at the local levels, in terms of operationalisation of the sustainability concept at the lowest project level (see discussion at Chapter 2).

3.2.2 Standard Code and Services of Public Building

Public building project consists of multi sectoral aspects in the development activities. The central government of Indonesia has set a legal framework on the decentralisation process by the minimum service standard of the development (World Bank 1993, 2006). The government considers nine development sectors: public works, education and culture, agriculture, health, environmental and land affairs, cooperative and labour affairs, trading and industry, and investment. From the nine development sectors, public building project is likely to interact with all of the sectors, whether directly or indirectly. Public work, trading and industry, labour affairs and investment sector have a strong influence on public building project's development.

Standard code and services in public building project are considerably important for business performance and both aspects also as manifestation of enforcement policy by the local authority. However, compliance to standard code and the standard of minimum service of public buildings at local authority's levels is still inconsistent. In fact, the standard of minimum service is separated from budget planning process, thus it requires a political role of fiscal funds from general allocation to fill this gap, including the public building activities (Ferrazi 2005). In addition, only 118 of 530 local authorities have an umbrella regulation for public building management until October 2013 (Tribunnews 2013). Furthermore, almost all regulations in local authority level regarding building permits only focus on calculation and fee payment of permit issuance (IMB: *Ijin Mendirikan Bangunan*) (APEC and USAID 2013:86). Although the development growth looks dynamics since reformation order in 1999, the National Standards Code progressively changes and develops in accommodating the standard quality and service in some aspects of public building management. The National Standard Agency (BSN: Badan Standard Nasional) provides SNI (Standard Nasional Indonesia) as the commitment in achieving quality of products of industry, such as building industry. Most standards from SNI are adopted from other country standards such as ASTM International, the British Standard and also Australia and Singapore Standard (APEC and USAID 2013).

The public building practitioners argue (see Chapter 2) that the idealism of engineering practices is eventually defeated by the knowledge and experiences of the

local leaders. Furthermore, this situation is adjusted to the dilemmatic situation; on one hand the practitioners should accomplish the project, on the other hand the local authority expects the budgetary performance at those projects. Therefore, most public building projects at the local level fail to perform properly, if judged from engineering criteria, although general performance of public building projects at the local authority has the similar problems, either under developed or lack of competitiveness. The exemplary cases are presented in Table 3.1.

Inconsistency in implementing standard code and services in public building project has been hampering sustainable development. The inconsistency in implementation of standard code and services, particularly the factor of compliance by local leaders to reserve the umbrella regulation of local building provision, raises inevitable issues: affordability, political acceptable, technical capacity, and suitability at the level of local authority. As discussed on the decentralisation process (Section 3.2.1), the disparity of local revenue has created horizontal gaps among regions. For instance, in 2014, only two provinces, DKI Jakarta and Yogyakarta have detailed public building regulation. It means the awareness of building standard code and service in the local authority level still has not been considered and less on the priority for sustainable practices.

3.2.3 E-procurement system in public building projects

Enhancing electronic system in the public procurement process is one important part of reformation in local authorities (World Bank 2006). The development of electronic purchasing system has radically changed the accountability of public building management at Post Reformation Order in 2004, when the information technology system supported the building project management significantly. The first efforts in applying information technology (IT) exist on the electronic procurement system (e-proc). However, the e-proc follows the procurement of good/service regulation, as stipulated in Keppres 80/2003 (Presidential Regulation). In 2004-2006, Indonesia was developing and implementing electronic Government Procurement (eGP) (afterward the terms changed to e-procurement) funded by the World Bank (World Bank 2006). Since 2008, the e-procurement has officially been implemented in national procurement activities, but it is only made mandatory since 2012 for implementation at local

authority levels. The statistic from Agency of State Procurement Policy (LKPP: *Lembaga Kebijakan Pengadaan Barang/ Jasa Pemerintah*) indicates the procurement activities from LPSE (*Layanan Pengadaan Secara Elektronik*/ the electronic service of procurement) at different levels of authority (central, province, regency, city and special authority). The detailed progress of implementation of e-procurement in the first five years (until 14 August 2014) can be seen in Figure 3.1.

Figure 3.1. e-Procurement activities based on authority level 2008-2012 (analysed from http://www.lkpp.go.id/)

In light of decentralisation process, the procurement unit (LPSE) until 2015 is predominantly in a regency level (see Figure 3.2.). Although the information system reaches the good progressive implementation in local authorities, the symptoms of unsustainable practice in public building management (as presented in Table 3.1.) have cast a doubt whether implementation of e-procurement system really works.

Figure 3.2. Unit of procurement service (LPSE) based on authority levels (analysed from http://www.lkpp.go.id/ 2008-2015, last accessed April 2015)

The efficacy of construction industry reforms at local authorities is still questionable in empowering local authorities through building capacity, either officials or the institutions (Hadiz 2004, Firman 2009). In fact, the e-procurement system in regard to the public building project is still locally-based rather than centralised (inaproc.lkpp.go.id)**.** Therefore, in this respect, this research attempts to explore who the key stakeholders are and what the strategic approaches are behind the success of local public building project. At the project level, this research attempts to investigate the relationship among stakeholders through procurement process at different levels of local authority. In regard to the disparity of local authority, in terms of capability of developing public building management, this research will measure, the interaction among key stakeholders (Local authority, Contractors and End-users) based on the major tasks during four phases of project life cycle, which is adapted from Wideman (2004).

3.2.4 The Roles of Local Authorities

Decentralisation process has implication to local authorities' roles through mandatory function in public management responsibility. The spirit of Local government Law No. 32/2004 regarding local authorities' role aims to transfer the responsibility of national programme. One of the responsibilities after the reformation

order is to reconfigure the construction development service at the local authority level. Consequently, the local authority reveals a wider task through the decentralisation system. However, the fundamental challenge of reformation is about readiness of public officer capabilities, in terms of undertaking public services with appropriate skills. Most of local authorities lack of management and are less capable, even this happened at Java Island which has always been the centre of development for long time. As the historical experience of Indonesian development in the two governmental orders (old order: 1945-1965, new order: 1966-1998) is predominantly centralised, all public administrations are system still fragile in doing so.

Regarding the role of local authorities from the organisational context, the fundamental perspective is about how to reinvent government to reform the current sustainable practices. The successful reform at the local authority level emphasises the leadership factor as the agent of changes (Lowndes and Leach 2004). However, to examine the appropriate framework of governing local authority's reform, Lowndes and Leach (2004) suggested three considerations on (i) informal interaction, (ii) dynamical changes in the complex environment and (iii) behavioural aspect of the stakeholders. In public building management, mutual interaction among key stakeholders significantly contributes to project performance (Olander and Landin 2005). However, dealing with the central role in regulatory situation and skills in this regard, the local authorities are also challenged with the dilemmatic options, either local choice or national standards and enforcement or influence through regulatory activities (Stewart 1997). In line with Indonesian public building practice at the local level, the decentralisation system casts the local choice by local autonomy regulation. However, the implication of transferred responsibility emerges another problem, namely regarding the readiness of local administrative staff in terms of capacity and capabilities of human resources at different levels of local authorities.

In the local government study, local authority is about "local choice" under the national standard (Stewart 1997:18). Nevertheless, the different interpretation in some national standard appears in particular areas as a response to the different need and aspiration. Stewart (1997:19) argues that "a standard should be uniform and can be secured by legislation and regulation". The balancing mechanism of local stakeholders'

role in implementing sustainability through public building projects not merely could be easy to adapt in the diversity of local expectations by the practices. In addition, the coordination by local representatives in the decision making of local choice sometimes is carried out too far from the goals, and that situation leads to the paradox (common approach versus local priority) because the rationale of regulatory function has been destroyed (Stewart 1997). Thus, there is the need of a strategic approach by local authority as a regulator to accommodate the different expectation of key stakeholders during the project life cycle. As long as local authority is a legitimate party, public building management should be encouraged for sustainable practices in order to enhance project success. In addition, the reification of sustainability at the public building management in a certain level of authority depends on the context and local characters. In order to obtain a greater understanding of a strategic position of Indonesian construction development, the next section presents the discussion about distinctive characters, which build a strategic character, in terms of market environment, natural phenomena, the demographic pattern, and development experience whose stakeholders are involved.

3.3 Distinctive Features of the Indonesian Construction Industry

Unlike most countries in the world, Indonesia has a distinct characteristic that shapes the management of construction projects. This section discusses aspects related to strategies of public building management at local authority level. The construction industry involves a number of development sectors that are different. This discussion focuses on 4 strategic aspects that can impact the future of the Indonesian construction industry, including: (i) market environment in an archipelagic country, (ii) the natural phenomena in a disaster area, (iii) demographic pattern, and (iv) development experience and the features of stakeholders. These aspects address the sustainability principle of public building industry in the Indonesian context. The discussion will apply a resource based view (RBV) perspective to the Indonesian construction industry.

3.3.1 Market Environment in an Archipelagic Country

Indonesian Construction sector was growing in the post-reformation order (1999-2004), contributing to the GDP with 6.7 per cent per annum (Mulyo 2013, BPS 2011). The middle class segment of population has been growing up to 7 million people per annum since 2004 (World Bank 2011). This growth is promising for labour market sources in the next decades. The opportunity for enhancing global position of the Indonesian construction industry will be achieved by focusing efforts on the policy-reform of bureaucracy and elevating the skills of potential labour force until 2020.

Potential market of infrastructure development becomes a trigger for public building project. As an archipelagic country, Indonesia is located in a maritime area with several sea lines (total length of coastal lines is about 54,716 kilometers) that is considered as having a strategic economic position (MP3EI 2011). The diverse islands are rich with various resources for construction materials (i.e. sands, gypsum, stones, timbers, steels, metals, bricks, bamboo and other kinds of materials) which offer a potential sustainable competitive advantage, even the difficulties come from limited infrastructure (Reed and DeFillipi 1990, Barney 1991). The obstacles of supply-chain among islands trigger the gaps in material prices and disparity of labour force, in terms of figure or wages rate. Moreover, the investment in construction industry development focuses mainly on certain islands, such as Java and Sumatera islands (BPS 2014).

In the last decades, the direction of infrastructure development proliferated in other islands. For instance, in early 2015, the national highway in Papua has been developed further up to 600 kms to connect the growth centres such as Merauke, Jayapura, Sorong, Wamena and Manokwari; the railway project in South-Sumatera and Sulawesi started in 2015 to accelerate the distribution of goods and services, and there have been local developments along Trans-Sumatera and Trans-Sulawesi (Ministry of Public Works 2015, Suara Pembaruan, 2015, Sriwijaya Post 2015). In 2011, central government through the Ministry of Economic Coordination promulgated the initiative programme to stimulate the potential commodities for infrastructure development by six economic corridors (MP3EI 2011: 46-47):

- Corridor of Sumatera “as a centre for production and procession of natural resources and national energy reserves”

- Corridor of Java “as a driver for national industry and service provision”
- Corridor of Kalimantan “as a centre for production and processing of national mining and energy reserves”
- Corridor of Sulawesi “as a centre for production and processing of national agricultural, plantation, fishery, oil and gas, and mining”
- Corridor Bali and Nusa Tenggara “as a gateway for tourism and national food support”
- Corridor Papua and Maluku Islands “as a centre for development of food, fishery, energy and national mining”

However, the big challenge with regard to archipelagic countries is the integration of development activities. Connectivity among islands means narrowing the national disparity through proliferation of development, including public building sector. The acceleration programme at the six economic corridors increases the private sector role, which becomes dominant in investment providing around 51 per cent, meanwhile the government provides about 10 per cent, State Owned Enterprise (*BUMN/ Badan Usaha Milik Negara*) about 18 per cent and mix about 21 per cent (MP3EI 2011:49). Although the role of private investment is dominant, local authority continues to have significant contribution to the public building values.

The challenges of the public building projects as identified in Section 3.2.1. are that only 14 per cent of the local budget is allocated to infrastructure development, while the disparity of potential resources at the different levels of local authorities requires a strategic approach to increase the competitiveness of this sector. Thus, the local authority’s roles in the future should be more innovative, in terms of either budget allocation or innovation programmes.

The ultimate challenges with regard to integrity and connectivity within archipelago environment are social issues, as reflected in the national motto “Unity in Diversity” (*Bhineka Tunggal Ika*). The public building projects of Indonesian local authorities face socio-cultural challenges. It is arguable that different characters of labour force sources in each island have a significant impact on building performance. These disparities force the contractors to export the labour force from Java islands (Jawa Pos 2015, Oebaidillah 2014). Therefore, this research will examine the appropriate strategic

approach to source labour by different levels of local authorities, in line with the vision of national connectivity, locally integrated through transportation system, and information technology.

In conclusion, the specific character of the market environment in an archipelagic country creates difficulties, in terms of logistics and transportation system, regional development, and information and communication technology (ICT). However, the vision of national connectivity refers to the economic activity management under the given market conditions rather than the physical environment. Thus, the next section will discuss the impact of natural phenomena on public building development, providing recommendations on how the stakeholder could develop a strategic approach to development management through the distinct characteristics of the natural phenomena in a disaster area. A strategic approach to disaster management will influence the role of local authority in terms of public policy making for public building design, procurement, standard code and service, accordingly.

3.3.2 Natural Phenomena in a Disaster Area

Considering the ecological aspect in Indonesian public building projects, the natural phenomena provide significant impacts. Indonesia is located in “The Ring of Fire”. Consequently, this country must put extra efforts for endurance against natural disasters like earthquake, volcano eruptions, and tsunami impacts. Hence, the sustainable indicators in public building management will be challenged amongst various natural disasters, in terms of adaptable regulation and priority tasks in sustainable development.

Since 2010, natural hazards influence cost for the global infrastructure recovery until more than US$100 billion in developed countries (IRIN 2013). Centre for Research on the Epidemiology of Disasters (CRED) ensured that economic damages in 2012 have been calculated which are relative to the GDP in developing countries as well. Some major disaster events which affected economic losses have been raised since the middle of the nineties. United Nations indicates that even relatively in a small scale, disasters can have major economic importance in large population countries

Figure 3.3. Ring of Fire Map (USGS 2012)

Indonesia is located in the Java trench which has a distinctive characteristic as an archipelagic country. Variability in terms of soil characteristics, topographical situation among eleventh thousands islands and a hundred tribes and languages is the valuable treasure. However, in the geological position as described in Figure 3.3, it is also highlighted the potential wealth from the rapid growth of GDP but contrary in dilemmatic position as "supermarket of disasters" (Asrurifak *et al.* 2010:52, The Earth Institute 2004) that frequently causes the great economic losses. In the top list of disasters in 1907-2004, flood, earthquake and volcano are located in disaster spots, which have the largest economical risk, whether in GDP proportions and mortality index (The Earth Institute 2004). In addition, since 1990 the distribution and frequency of national disasters significantly increase and are concentrated at more populated islands like Java, Sumatera and Sulawesi, as can be seen in Figure 3.4.

(a)

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(b)

Figure 3.4. Disaster Map Distribution (a) and Frequency (b) in Indonesia until March 2015 (BNPB 2015)

This greater challenge refers to the local governments' act in handling disaster's impacts that reflects to the national strategic planning of urban development, particularly in public building projects. The challenge from the natural phenomena lies

on the great impact of disaster's victims rather than solely on technical consideration. It has been well-known that Indonesia is in the fourth place of the largest population countries in the world. In this respect, the local authority plays a strategic role to accommodate the demographic pattern and learn from development experience to sustainable practices, particularly in public building projects. The next inquiry in regard to the demographic pattern and development experience would be addressed in Section 3.3.3. The Indonesian development experience by the three political orders (old order, new order and reformation order) will be illustrated accordingly.

3.3.3 The Demographic Pattern and Development Experience

The twentieth century will be remembered for many things: devastating wars, remarkable technological changes, the human population explosion, environmental degradation, but perhaps above all for the dramatic urbanisation of human societies (Gilbert *et al.* 1996). At the end of the 20th century, Indonesian population reached about 205 million and 42 per cent of the people lived in cities and towns (BPS 2000). This figure has increased doubled, since the first national census in 1960.

By 2014, Indonesian has a population of more than 250 million and about 53.7 per cent lived in urban areas (BPS, 2014). Along the 50 years population growth in the post World War II, demographic pattern is always referred as the development parameter in the world (Lam 2011, 2013, Becker 2013). The demographic pattern of a country with big population like Indonesia has a significant impact on the labour cost, promoting human capital and demand aggregation, and also efficiency improvement and technological development (Johnson 1999, Hasan 2010).

Demographic pattern is related to the development capital. In the construction industry, the demographic issues brought a labour force and migration aspect influencing the figures of productivity in this consideration (Ministry of Public Work 2011). The lesson learnt from the Indonesian development experience can be captured from three different authority orders: old order (1945-1965), new order (1966-1998) and reformation order (1999-now).

The Indonesian development policy experiences induced by the demographic factors are successfully achieved in some aspects. Successful population control has been

achieved by family planning, which brought a demographic transition as in China (Nitisastro 2011). The Indonesian government had reduced the fertility rate from 5.3 in 1980 to become 3.4 in 1990. However, population growth remains a challenge in terms of the population distribution, as the population density is concentrated in five largest Islands (Java, Sumatera, Kalimantan, Sulawesi and Bali). The demographic policy of Indonesia appears in the national approaches, namely family planning. Family planning with focus on 'two children enough' successfully controlled the populations in 1989 as indicated by fertility index in Table.3.4. In addition, the success factor of decreasing fertility was caused by two programmes: expansion of education for women and usage of contraception since 1970 (Nitisastro 2011). Nevertheless, the national migration factor also has a significant role in population control between 1971-1995. Based on the Indonesian Statistic, the urban population smoothly grew since 1960 around 15 to 50.34 per cent or about 117 million in 2007. In the last decades, Indonesia has been distinguished as one of successful emerging economies (World Bank 2011). However, the national policy development on the infrastructure requires improvement to reach the standard minimum level, although the construction industry already reached a value around US$ 120 billion in 2010 (Ministry of Public Works 2011, 2013). Furthermore, the discrepancy of geographical distribution the population requires the different focuses of government strategy to match the demographic pattern in such infrastructure development (Nitisastro 2006).

Table 3.4. Indonesian Demographic Pattern at Three Political Orders.

Sources: BPS (2010), Mustopadidjaja *et al.* (2012), World Bank (2011) and United Nations (2013), Hermawan *et al.* (2015)

The strategic development approach by each political order also reflects the national strategy in demographic consideration. In the old order, the strategies focus through collective battle on all sectors toward independencies, economic development through cooperatives, while the vital production activity and predominance of the people are administered by government. The new order, or popular by known as development

order, has the Trilogy of Development: Dynamic of National Stability, Economic growth and equitable development. The development in new order is designed in a long-term process. The process was implemented throughout state development provisions (*GBHN: Garis-garis Besar Haluan Negara*) which is realized through 25 yearly development programme (*Repelita: Rencana Pembangunan Lima Tahun*). Meanwhile, in the reformation order, development was directed to improvement of people's welfare, well growth of democratic life and the truth justice that were deliberated from development, prosperity, democracy and justice. The national leader (president) had changed for three periods within six years of reformation order.. The economic fundamentals were strongly and initially helpless against external financial shocks, also the difficulty of macro and micro-economic sectors. In between 1999-2004, Indonesia was facing the challenges as follows (Mustopadidjaja *et al.* 2012):

- Decreasing public welfare and increasing social-problems affected by economic growth,
- Between 2003-2004, the unemployment rate increased from 9.5 million to 36.1 million,
- Rapid changes in agricultural land into non-agricultural commodities had led to a decrease in the quality of agricultural and environmental quality,
- Inconsistencies of the environmental protection and natural resource usage,
- The quality of education did not meet the minimum requirements,
- The division of roles and responsibilities at the level of government had not been steady,
- Equitable development of inter-regional disparity remained wide.

Fortunately, after 2004 the above conditions gradually changed. In 2005-2009, the average economic growth reached around 5.9 per cent per annum, even the highest value of 6.3 per cent in 2007, and increasing per-capita income from US$ 1,186 (in 2004) to become US$ 2,271 (in 2008) (Mustopadidjaja *et al.* 2012). The good performance of Indonesian development in these periods recorded increasing Index of Human Development from 0.711 (in 2004) to become 0.734 (in 2007) or placed in rank 111 out of 182 (UNDP 2004, 2007 and Mustopadidjaja *et al.* 2012).

The reformation order replaces the new order regime as a manifestation of

demanding democratic issues in national leadership and the political system. The euphoria of reformation order has created the radical changes in the government system. The multi-party in the election system (previously only three parties) make national leader have limited opportunity to be elected with the maximum of two periodicity, and promulgation of the decentralised system into tier two of authorities in local level: province and regency or city level (Nitisastro 2006). Local autonomy became a political rider to break centralistic government as the previous two orders (old order and new order). The local autonomy issues follow the establishment of new chapter of Indonesian development pathway.

The democratic government creates the opportunities for local authority in the development of policy making. As indicated by the historical figure, development spending has been growing since 2004 (BPS 2010). During that period of growing, the Indonesia construction industry appears to be in its most awakening period where the democratic process of procurement and accountability is officially concerned throughout the national budgetary constitution. However, the implementation of regulation of construction service industry has not been satisfactorily improved. This is caused by incapability of public officials that leads to inefficient and ineffective performance in public infrastructure development.

Local autonomy policy creates a dilemma in the public infrastructure provision; in one hand it provides the opportunity to reconfigure effective decision making in local authority, in the other hand the different natural resources and human resources among local regions have sharpened the disparity of local revenue that narrows to inequality of local development. Although the various fiscal policy schemes have been established to fill the gaps of local financial by central government, it seems insignificant for smaller regions with low-revenue and limited resources, both natural and human resources (Kaho 2012). Thus, this research will explore the key stakeholders who can address the sustainability of public building management at the local authority level. Furthermore, the case studies will find how the stakeholders through the development practices can achieve the project success.

3.3.4 Stakeholders of Construction Industry at local authority level

The stakeholders of Indonesian construction industry are involved in various roles in the business activities. There are five stakeholders at the national level (Mulyo 2013):

- Ministry of public works, as the main regulator of construction industry sector and as the representative of the government or authority,
- Practitioners of construction service from multi-disciplinary expertise, particularly in business agency or contractor's company and consultant firms
- Customer of construction service, whether state or private party,
- Indonesian Customer Agency (YLKI : *Yayasan Lembaga Konsumen Indonesia*) as the representative of customer in construction service,
- Construction Service Development Board (LPJK: *Lembaga Pengembangan Jasa Konstruksi*) as a chartered organisation which has roles in competency certification for practitioners and construction business unit.

The research of public building in Indonesian local authorities tend to focus on the project organisational level which has three actors which predominantly are involved in the project activities : Local authority as the representative of local government, Contractors as the primary executor of the projects, and end-users of the building.

The stakeholders of construction project are well defined in Law No.18/ 1999 concerning Construction Service and supported by other government regulation, as explained in the following descriptions:

- Client (*pengguna jasa*): personal or an organisation which has the project
- Service provider (*penyedia jasa*): personal or an organisation which obtains the contractual project of construction service due to the capabilities in particular area of construction project
- Construction planning service or design consultant service (*Jasa perencanaan konstruksi*): personal or an organisation which has engineering background and other disciplinary that supports the service activities in planning activities.
- Constructor project service (*Jasa pelaksana konstruksi*): personal or an organisation, which has engineering background and other disciplinary that supports the service activities in project execution activities.

- Construction supervision service (*Jasa pengawas konstruksi*): A person or an organisation which has engineering background and other disciplinary that supports the service activities in supervision activities (monitoring quality of the construction execution).

The stakeholders as defined by the Law No. 18/1999 have independent duties in doing their roles. In practice, the project execution should be considered in a contractual statement at the beginning. However, in recent development of Indonesian construction industry, the roles of stakeholders have improved due to complexity on the project organisation.

The stakeholders of public building projects in this research are predominantly small contractor firms, which are about 95 per cent with the limited amount of experts and skilled labourers (BPS 2011). Based on the Development Construction Service Board (LPJK), among 33 provinces, Indonesia has experts labour about 8,724 and skilled labour about 13,603. These figures are still dominant in certain local authorities, such as Jakarta, Central Java, East Java, and East Kalimantan (Mulyo 2013:52-53).

Generally, the clients of public building project at local authority are also enacted as the end-users of the buildings, especially most of the regency and city levels. Only three stakeholders have a dominant role at the construction business, consultant, contractor and Construction Service Development Board (Mulyo 2013). However, this research focuses on the interaction among three key stakeholders: Local authority, contractors, and end-users of the public building projects. Local authority refers to in-house management of consultants, consisting of engineers, architects or designers and project management consultants or supervision consultants. Contractor is the central consideration as a successful factor in public building projects (Magdani 2013). The end-users of public building involved in this research are based upon the empirical evidence of the occupants awareness toward failures and defect . Further, most of the building investigations committed to the fraud, building failure and defect, even corruption as presented in Table 3.1. are more effective if engaged with public opinion as the occupants or building end-users.

The measurement of stakeholders' interaction utilises a performance model interaction. This research uses the interaction model of LACU (Local Authority-

Contractor-End-users) through the intensity of interaction due to the project task as developed during the project life cycle and adapted from gravity model from transportation system (see the conceptual framework and interaction model at Chapter 4).

The success parameter of public building project refers to the sustainability performance criteria by Indonesian state auditors 3Es: Economical, Efficient and Effective. The economic criteria mean considerate use of the minimum of time or resources of building project. Efficiency criteria mean being effective with consideration of time limit, efforts or budgetary expenses. Finally, the effectiveness criteria mean an intended result of building project or meeting the need of the stakeholders, whether in social, economic or environmental aspect.

3.4 Strategic Perspective for Enhancing Sustainable Practice in Public Building Projects

From strategic management perspective, developing public building projects in Indonesian local authorities are not only limited to obtaining profitability and establishing mutual collaborations among stakeholders. Fundamentally, a successful project requires a formal planning, because the strategic planning needs an examination through the system and objectives (Armstrong 1982). However, Armstrong (1982) stated that each activity of formal planning comprises a sequential stage, from defining objectives, generating strategies, evaluating alternatives up to monitoring the performance to seek the stakeholders' commitments. Some researchers reaffirmed that a greater satisfaction emerges from the stakeholders being involved if the organisation has the explicit objectives to pursue (Arvey, Dewhirst and Boling 1976, Ivancevich 1977, Hofaidhllaoui and Chhinzer 2014). Based upon the evidence of performance in public building projects in Indonesian local authorities and the challenges to overcome the distinctive characters within the industry as described in Sections 3.2 and 3.3., the research questions propose the fresh idea for the future sustainable practices through strategic approach.

Based on the Indonesian Construction Agenda, there is a future challenge in formulating the potential factors considered for future public building practices at

different levels of local authorities. National Construction Service Development Board (LPJK) has identified the current positions of the future challenge for Indonesian construction Industry. The driver of strategic factors is emerging from the potential domestic and global markets which grow confidently for decades. On the contrary, the internal barriers still exist on the unfinished national reform and leadership at the national level. Somehow, the global market mechanism has a strong influence in the intervention to the national interest, such as local capabilities issue and market protection .

However, the opportunities are still open through repositioning on the industry market and synergy among public building stakeholders (LPJK 2013). In light of the historical performance of construction business in Indonesia, and National agenda in Construction Industry (see Table 3.5), this research attempts to contribute to the sustainable development, particularly in empowering building project institutions at the local authority level. The construction industry has a strategic role for national development. Instead of being part of economic activities, this sector has the social and cultural impacts on Indonesian civilization (Tamin 2013:12). In 2012, the construction industry sector has a contribution to national Gross Domestic Product (GDP) that reaches 10.5 per cent, and is growing to 7.5 per cent per annum. Moreover, Tamin (2013) stated that the construction industry grows above the national economic growth 6.2 per cent per annum and contributes to employment opportunity up to 5.3 per cent of total workforce of 120.4 million. However, the construction expenses budgeting at the same year reached between four to five per cent of GDP and predominantly 70 per cent from state budget.

Table 3.5. Four stages of national agenda in Indonesian construction Industry (LPJK 2013)

As the National Construction provision Act No 18/1999 about Construction Service, it is stated that the industry should be sturdy, reliable, competitive and qualified. However, the construction industry regulations still need to be enforced for achieving International best practices through four points:

- Integrating business and construction labours policies under the same umbrella regulations,
- Classifying the business area based on product and international standard,
- Establishing construction board organisation which is independent from the state authority,
- Giving the authorities for Professional Chartered Bodies, and vocational skill license by company associations.

Public building sector in local authorities should be part of the key player in the national construction industry. Moreover, since the new Local Authority regulation No.23/2014 elaborated the governance role based on the different levels of authorities, it means specifically in contributing the sustainable practices, local tasks are inevitable.

Based upon the descriptions above, this research aims to develop a framework that

will help local authorities to enhance sustainable practices. A strategic approach will help the local authorities to make a realistic direction at the policy level and at the same time enforce them to the operational level through the building control function. In light of flexibility of strategy, the principle of a strategic approach tends to raise a harmonious interest among key stakeholders of public building projects. To this extent, the local authority needs to accommodate locally based interests, whether through project initiatives, resources supply, local contractors, or local work force. In other words, sustainable practices will deliver local expectations throughout national agenda of construction industry that contextually changes, due to the local characteristic at different levels of authorities.

3.5 Summary

This chapter has discussed and evaluated the management of public building project by Indonesian local authorities. Three aspects have been discussed: performance of public building project at local authority level, the distinctive characteristics of Indonesian construction industry, and strategic views for enhancing sustainable practice in public building projects.

The public building projects at the local authority level have been identified, that their overall performance is influenced by decentralisation pathways. Lack of capability and unskilled local practitioners are causing poor performance of public building projects. The different levels of local authorities also reveal that attitudes of local leaders are significantly influencing the project performance, in terms of amendments throughout the design, steering mechanism at project level (i.e. building permits), the involvement to the construction process without basic knowledge regarding building project management; even the parliament members' interventions are hampering building project execution.

The fundamental problem of public building management at the local authority level is related with the budgeting priority. Most of local budgeting will focus on the staff payroll rather than on infrastructure development. Hence, the decentralisation process is challenging to establish funds for public building projects, and to avoid financial resources being committed elsewhere. Subsequently, standard code and services in

public building project are considerably important for business performance and both aspects are as manifestation of enforcement policy by the local authority. The inconsistency of implementation standard code and services, particularly the factor of compliance by local leaders to reserve the umbrella regulation of local building provision, has led to some inevitable issues: affordability, political acceptability, technical capacity, and suitability at the level of local authority. However, the idealism of engineering practices eventually is defeated by the academic knowledge and experiences in public building management of the local leaders. In light of decentralisation, until 2015, the total procurement unit is still predominant in a regency level. Although the information system reaches the good progressive implementation in local authorities, the symptoms of unsustainable practice in public building management have cast a doubt whether implementation of e-procurement system really works. In other words, the awareness of building standard code and services in local authority's level still has not been considered and less on the priority for sustainable practices.

A successful reform in public building projects is influenced by leadership factors. In addition, above all, stakeholders' expectations will focus on the harmonious interaction among them. However, the decision making of local authority is sometimes carried out too far from the project goals and that situation leads to the paradox: common approach versus local priority. Thus, a strategic approach for enhancing sustainable practices at different levels of local authority is needed to accommodate the different expectation of key stakeholders during the project life cycle. As long as local authority is the legitimate party, the public building management should be encouraged for sustainable practice for enhancing project success. In addition, the implementation of sustainability at the public building management in a certain level of authority depends on the context and local characters. The discussion points out four strategic aspects of future concern for Indonesian public building industry, including: (i) market environment in an archipelagic country, (ii) the natural phenomena in a disaster area, (iii) demographic pattern, and (iv) development experience and the features of stakeholders being involved. These aspects address the sustainability aspect interchangeably based upon the local context.

A strategic approach becomes fundamental actions by key stakeholders (Local Authority, Contractor and End-user) to achieve sustainability at the local levels. In light of the principle of strategic approach, viability in this extent should be reliable at the operational activities, because success factor is reflected from the correlation between research from the past-experiences and real action of the authorities to address the value changes based upon the sustainable practices**.** Above all strategic aspects which have been discussed, the prospective interest among stakeholders is the key of public building performance.

CHAPTER 4 Conceptual Framework and Interaction Model

4.1 Introduction

This chapter aims to establish a conceptual framework and assessment model to enhance sustainable practices in public building management. The framework has been adopted from a framework of dynamic capabilities within the strategic management domain. The developed framework seeks to obtain an in-depth understanding of interaction between key stakeholders - local authorities, contractors and end-users - in public building management. The framework originates from the application of dynamic capabilities as introduced by Teece, Pisano and Shuen (1997) and from the adoption of the sustainable practices, which capture the practitioners' approach to reaching sustainability in their performance in public building projects. The theoretical basis of the framework will be applied to and developed from the evidence obtained from the three case studies.

The initial framework of dynamic capabilities will be elaborated using sustainability concepts during the life cycle of public building organisations, and this research explores the practitioners' perception as presented in Chapter 2, and from twenty-four semi-structured interviews obtained from three case studies. Based upon the philosophical assumptions of sustainable-dynamic capabilities in public building projects, the developed framework will be assessed using the pattern of interaction between local authorities, contractors and end-users within a public building model. The model of LACU (Local Authority-Contractor-End-Users) is proposed as a tool for local authority to justify the sustainable practices of public building management at different levels of local authority, through a qualitative approach obtained from three case studies.

The philosophical assumptions of sustainable-dynamic capabilities in public building project will be verified critically from an ontological, epistemological and methodological perspectives'

The philosophical assumptions have been established from a methodological perspective of local government studies. It then becomes a basis for establishing a

strategic approach to elaborate the concept of dynamic capabilities which are attained by sustainability and through analysis of the interaction model at the local authority level. In contrast to the original perspective of dynamic capabilities, a strategic approach in public sector management will be recognised and discussed accordingly. Finally, the conceptual Framework of Susatainable Dynamic Capabilities (FSDC) is developed from the concept of dynamic capabilities. The framework illustrates a balancing mechanism of sustainable practices from the grounded approach at different levels of local authorities.

4.2 Ontology, Epistemology and Methodology Position

4.2.1 Ontology: Perceptions of public building practitioners for enhancing sustainable practices

Ontology concerns the perception of practitioners towards a strategic approach in public building management. The approach could be interpreted differently by individual practitioners throughout the sustainability principles in practices (as discussed in Chapter 2). The nature of perception of sustainable practices by public building practitioners is reviewed by four ontological assumptions based on naturalistic inquiry: objective reality, perceived reality, and constructed reality or created reality (Lincoln and Guba 1985).

In social science, reality is a relative, contested term and could mean different things to different people. The four ontological assumptions from the naturalistic study as introduced by Lincoln and Guba (1985:37) argue that reality is a notion, which has "multiple constructed realities that can be studied holistically". The discussion is presented as ontological positions.

- *Objective reality.* The realities may emerge as a "hypothetical realism", and comprehension as understanding of "tangible reality". Experience within objective reality can result in knowing it. The objective reality exists independently from the observer. The knowledge of reality has the power that is explanatory in nature.
- *Perceived reality.* This ontological position asserts that the truth is partial or

incomplete. For instance, a perception is partial information or an incomplete view of something, but it is real. Thus, there is a reality, but people do not fully recognise it. The best personal beliefs emerge by virtue of the whole picture of phenomena. Then, it is argued that reality exists out there.

- *Constructed reality.* The multiple realities are constructed from an "infinite number of constructions that might be made"**.** Different actors ascribe different meanings, and thus, they also have different realities. Hence, a consensus is required by different groups to determine a reality.
- *Created reality.* This ontological position is contradictory to the other three, where there is no reality. The existence of something depends on the observers' mind. The individual's actions enable them to create their reality. This ontological position is radical because the observer can create "the facts" which are assumed through many responsible and creative ways on the ground.

Based upon the four ontological positions, it seems there are only two opposing standpoints; in fact, there is the existence of reality (objective and perceived reality) and there is no reality at all within (constructed and created reality). The constructed and created realities share similarities in their fundamental beliefs about the nature of reality, hence the existence only appears when the reality is constructed by a participant (Lincoln and Guba 1985).

Based on the four ontological positions, there are considerations that must be used/adopted/put into place to review the different assumptions about the nature of public building practitioners' perceptions to enhance sustainable practices. In regards to the opposing standpoints of reality, it is argued that practitioners are of the belief that the benefits of sustainable practices in public building project emerge from "out there" and the perceptions are commonly constructed and created by experiences and individual capabilities of the participant. In other words, the perceptions of public building practitioners in sustainable practices are subjective interpretations among the stakeholders involved within a dynamic environment. This ontological assumption argues a new perspective on the reality that changes the understanding and the nature of perceptions of public building practitioners. Thus, the perspectives established from the

basis of ontological assumptions are developed by subjective interpretations and enabling aspect of dynamic capabilities in case studies of public building projects.

4.2.2 Epistemology: The approach to enhance the sustainable practice in public building project

Epistemological assumptions are associated with the ontological position about the nature of sustainable approach in public building. The epistemological assumptions are adapted from the framework of dynamic capabilities, which fundamentally rely on the nature of project organisations. The prescription of a strategic approach will be discussed based upon the theoretical basis in strategic management in Sections 4.3 (about dynamic capabilities view as an initial framework) and 4.4. (about strategy in public building sector). In terms of organisational perspectives, the epistemological assumptions focus on the approaches to set the goals of building project during the project life cycle by local authorities, contractors and end-users. The different approaches of sustainable practice by public building stakeholders at different levels of local authorities are discussed**,** according to the interaction model that will be proposed in Section 4.6. (Model of LA-C-U). The conceptual framework of sustainable-dynamic capabilities and interaction model attempts to demonstrate in-depth understanding, to establish the strategic approach to enhance sustainable practices in public building projects.

4.2.3 Methodology: A guiding approach to understanding the strategic mechanism for enhancing sustainable practices

A methodological assumption was established according to the ontological and epistemological assumptions in the preceding sections. This part concerns a set of guiding approaches to understand the strategic mechanism for enhancing sustainable practices in public building projects. The epistemological assumptions about the strategy in the building sector that are adapted from the dynamic capabilities framework (initial framework) will be applied initially to review the assumptions to formulate the connection between the assumptions and data collected to understand the nature of sustainable practices in public building at different levels of local authority. The

merging theoretical concept and empirical study for enhancing sustainable practices at project level has served as a platform to develop a framework of sustainable dynamic capabilities. The framework is representative of best practice among public building stakeholders in Indonesian local authorities. The ultimate goal of this research is to help local authorities to achieve project success by adopting sustainable practices derived from the dynamic capabilities framework.

4.3 Dynamic Capabilities Theory in Strategic Management: An Initial Conceptual Framework

According to modern public administration, local authority is a manifestation of a decentralised state that has a diverse range of capitals, in terms of natural and human resources that emphasise various factors influencing quality of life. Adopting sustainable practices in the public sector is a challenge within local authority environment. The capability of local authority to overcome the disparities of resources among regions offers a direction toward a strategic approach to enhance project success. Public building practitioners are the key players to influence project performance, and act as agents of change for enhancing sustainable practices. Since sustainability principles offer a better change for improving quality of the local construction industry market, sustainable issues become an important factor in every development effort. As a promising business sector for National GDP, public building projects are encouraged to enable the strategic paths from three different perspectives of sustainability pillars: social, economic and environmental.

In a/ strategic management field, particularly with regards to the strategy to improve business competitiveness, there are two schools of thought with corresponding strategy tools: (i) the market positioning school and (ii) the resource-based school (Evans 2013). The market positioning school states that strategy focuses on the level of business activities, where all meaningful competition resides and is limited to corporate portfolio planning. The resource-based school determines that strategy is focused on leveraging the resources and capabilities at corporation level. In this research, it is argued that the nature of stakeholders and activity-based performance in the construction industry is more influenced by the resource-based rather than market

positioning school, because construction activities consist of materials and engineering products along the project life cycle. Constructions industry is inter-dependent stakeholders rather than competition solely. On one hand, the process of construction business is competition- activities, but the activities in the project levels**.**

However, the research on competitive strategy in the construction industry sector seems to have been stagnant for about a decade, specifically between 1987-1995 (Green, Larsen and Kao 2008). Numerous school of thought have characterised the strategic management field, such as; the competitive positioning school (Porter 1980), the action school (Mintzberg 1990), the resource based view (RBV) (Barney 1991), process school (Pettigrew 1997), the dynamic capabilities (Teece, Pisano and Shuen 1997) and practice school (Jarzabkowski 2005). Further, Green, Larsen and Kao (2008: 63) argued that in the construction industry the seminal works increasingly disconnected correspond to the lack of homogeneity. Thus, this research would contribute to filling that gap, specifically on 'how to obtain the competitive advantage' through empirically based research in a/the local construction industry. In many respects, literature regarding competitive strategy in construction firms identifies factors influencing competitive advantage by strategic prescriptions, labour-based capital and maintaining positive cash flow (Lansley 1987, Hillebrandt and Cannon 1990) and also interact with Porter's positioning school (Ofori 1992, 1993). In addition, Mintzberg (1983) also suggests the competitive aspect can be built from the strategy as a plan, as a ploy, as a pattern, as a position and as a perspective. Other researchers have argued that competitive advantage from capabilities and competence. Langford and Male (2001) argue that the construction industry needs distinctive capabilities, from the design of the organisation through to enhanced reputation and innovation. The competitive advantage from common discussion refers to the resources and capabilities to contribute to the organisational performance. Most literature in strategic management cannot provide a precise definition that corresponds to resources allocation and capabilities management (Green, Larsen and Kao 2008).

The term 'dynamic capabilities' refers to the ability to reconfigure resources and the capability of an organisation to respond and adapt to the change in operating environment to enhance competitive advantage of contractors. This research on the

management of public building projects in local authority will focus on the firm level competitive advantages. The building project is made up of multi-sectoral activities with corresponding resources allocation and it requires a specific skill and expertise to create buildings/ facilities for an increased quality of life. In other words, a public building project comprises activities in which resources and capabilities are deployed to gain the value added to the built environment. Thus, those activities echo a resource-based view as the basis of the conceptual framework in this research. The development of competitiveness theory at firm level has explored issues relating to human and non-human resources under the communication and administrative coordination (Pitelis, 2005). The decade to come, following the paradigm developed by Porter, a positioning strategy was developed to explain the shape of strategic implementation to gain competitive advantage at firm level. For almost three decades, the Sustained Competitive Advantage (SCA) was developed based on the internal resources (De-La-o, 2015). Resource Based View (RBV) and Dynamic Capabilities View (DCV) become emerging dominant paradigms in strategic management field in the last two decades (Pablo *et al.* 2007, Green, Larsen and Kao 2008, De-La-o 2015).

RBV corresponds to how the optimisation of internal resources and capabilities can complement the positioning strategies as per Porter's paradigm (Brahma and Chakraborty, 2011). However, the rapid change of the firm operating environment limits the implementation of RBV. Priem and Butler (2001) argue that RBV has no managerial implication at an operational level. In addition, the RBVdoes not explain the direction for the managers to achieve the competitive advantages and this paradigm is also not applicable in the small firms (Connor, 2002). In contrast with DCV, the dynamic nature of resources and capabilities plays a significant role in competitive advantage. Adaptation to a rapid change of environment provides a competitive performance. DCV complements RBV in terms of its advantage to consider dynamic nature of environment to reconfigure firm resources and capabilities. In the paradigm of DCV, resources can be in tangible or intangible forms that allow managers to act upon to achieve and sustain competitive advantage (Rumelt *et al.* 1992; Barney, 2008; De-la-o, 2015).

Evans (2013:235) extracted from market positioning and resource-based schools, six selected essential strategic tools to gain strategic competitive advantage. These are: (1) “optimising the corporate portfolio”; (2) “creating value from mergers, acquisitions and alliances”; (3) “the corporate restructuring hexagon”; (4) “creating parenting value”; (5) “core competences” and (6) “strategic valuable resources”. All aspects related to the phenomena of management of public building projects in a local authority context mostly refers to the most influential school “core competences” which earliest stated by Hamel and Prahalad (1994).

Public building projects represent a manifestation of the core competences of stakeholders as the business drivers, in terms of process, assets and paths. However, the rapid change of the local authority environment stems from the dynamic behaviour among the public building practitioners or the management of resources. The phenomena in the management of public building projects require a broader analytical framework adapted from the RBV and DCV.

In summary, there are two distinguished conceptual frameworks that consider the creation of competitive advantage: (1) Resource Based View (RBV) and (2) Dynamic Capabilities Framework. To choose the appropriate initial framework, these two conceptual frameworks are discussed in the following sections.

(1) Resource Based View (RBV)

The RBV is a framework in strategic management, which focuses on the firm business level (Barney, 1991). Barney (1991) argues that a firm can generate a competitive advantage through valuable and rare resources. However, these two assumptions of RBV are not sufficient to sustain the competitive advantage. Further, Barney (1991) suggests the Valuable, Rare, Inimitable and Non-Substitutable (VIRIN) attributes as the source of sustained competitive advantage, as can be seen in Figure 4.1.

Figure 4.1. Resource Based View-VIRIN Framework (Adapted from Barney 1991: 112)

This framework explains that competitive advantage can be achieved by a relative advantaged among firms. There are four basic criteria to gain the competitive advantage (Peteraf 1993): heterogeinity, imperfect mobility, ex ante limits to competition and ex post limits to competition.

(i) Heterogeneity. As Barney (1991) stated that a competitive advantage can be created through differentiation products. Thus, resources heterogeneity will achieve efficiency differences and lead to a competitive advantage (Peteraf 1993, Barney 1991).

(ii) Imperfect mobility. Imperfect in this context means unique resources or specific value from its origin. Specific value of resources to the firm can bring a bargaining positioning in the market. The certain resources from specific place has a relative value from others. In other words, different owner or management of that kind of resources can be a different market value. Thus, imperfect resources mobility also provides a specific value and can capture opportunities through resources to obtain a competitive advantage.

(iii) Ex ante limits to competition. A superior resource position is another form of competitive advantage. However, strategies and cost implementation have a significant role to generate a profits.

(iv) Ex post limits to competition. A production process by a firm which cannot be imitated easily is a competitive advantage. Similarly, Dierickx and Cool (1989) stated that difficulties of copying a mechanism of a firm's work represents a competitive advantage.

These four basic criteria outline the equilibrium concept in economy theory, but limited information regarding the resources cannot support our understanding to RBV. These criterias quite normative in terms of dynamic environment and managerial aspects to gain competitive advantage (Foss 1998). The dynamic aspects are attributed to the firm's activities, as Penrose (1959:1) stated as "unfolding process" of firm development. The process of firm development can be analysed by its activities (Hogarth *et al*. 1991, Foss 1998). Hogarth *et al.* (1991) developed a four-stage framework to assess the firm evolution through four activities: priviledge access, transformation, leverage and regeneration. First, the privilege access means the primary access to resources and market, where the way of earning resources is more important than process to get the access. Second, transformation means the stage of transformation of resources to become a product. As a process inherits by the past activities, transformation stage is not able to change in the long-run process. In turn of extra-ordinary situation or above normal condition, the changes of process cannot be achieved and it will be imitable by other firms. Third, leverage means capability to renew the process of transformation. This stage would be functioned as barrier the imitation and substitution of the resources. Finally, the regeneration corresponds to the ability to create a new method of transformation. However, these four-stage framework is quite normative explanation to identify "how to sustain a competitive advantage from resources. In other words, the four stages framework could help a firm in terms of scenario to examine sustain competitive advantages on the theoretical level.

With RBV, only strategic resources can provide a sustained competitive advantage. Although the RBV is one of widely accepted approach in strategic management field,

there are some critics about the weaknesses. First, according to Connor (2002), the RBV explains how the competitive can be obtained by VIRIN through appropriate organisational context. However, at operational level, this framework does not explain how the managers obtain the competitive advantage. The second weakness concerns the unit of analysis in terms of single unit of resources. The single resources will isolate the heterogeneity (Peteraf 1993). In other words, the usage of resources in construction products are complement each other. Further, Foss (1998) argued the logic of complementary and specific resources where capabilities or competencies are contribute to RBV. Thus, it clarifies the uniqueness of resources does not matter rather than "ability to fit into the system" (Foss 1998:143), or combination among single resources resources to create a value is a heterogeneity issues (Lockett, Thompson and Morgensten 2009). Third, the issue of tautology of reasoning RBV. Prime and Butler (2001) claims the circular reasons to establish an understanding of resource based perspectives. From the statement of Barney (1991), competitive advantage is built by a valuable and rare resources. In contrast with Prime and Butler (2001), they argue the sense of chievable concept if the value and and competitiveness similarly defined. Further, Peteraf and Barney (2003) stated that competitive advantage is valuable in terms of profitability which is exist on the competitive edge. As a theoretical perspective, resources based view can be stated if it was tautological (Barney and Clark, 2007) and the framework cannot explain the correlation between resources and environment (Priem and Butler 2001). Fourth, the heterogeneity condition of resources as source of competitive advantages. Heterogeneity is close to diversity of resources which potentially contributing a competitive advantage of a firm. The origin of heterogeneity can be explained by the "organisational economic and dynamic capability approach" (Mahoney and Pandian 1992 in Pamulu 2010:31) and heterogeneity contributes in shaping the competitive advantage as additional condition (endogenous element) (Foss and Knudsen 2003).

In summary, RBV emphasises the firm's resources to determine the competitive advantage. In contrast to Porter's framework, RBV sees competitive advantage from firm level rather than industry level. Both frameworks complement each other, but they have similarity in terms of explanation of the phenomena of sustainable competitive

advantage and environmental changes in construction industry. A combined Porter's model (Porter 1980) and RBV (Barney 1991, Peteraf 1993, Amit and Schoemaker 1993, Peteraf and Barney 2003, Foss and Knudsen 2003) contributes to a composite framework to demonstrate the interaction model between performance and the dynamic aspects to sustain a competitive advantage.

(2) Dynamic Capabilities Framework

A dynamic capabilities framework was rooted in the work of Teece, Pisano and Shuen (1997). Nevertheless, in the last decade other researchers proposed contrasting ideas, in terms of perspective and implementation Pablo *et al.* 2007, Barreto 2010, Peteraf, Stefano and Verona 2013). The origin of dynamic capabilities concerns capabilities of a private enterprise to cope with rapid changes within their operating environment in the manufacturing industry. Dynamic capabilities as an approach to gain competitive advantage were developed using the conceptual framework of management capability and organisations to sustain the competitive advantage based on resource based view (Schumpeter 1943, Penrose 1959, Rumelt 1984, Nelson and Winter 1982, Teece 1984, Prahalad and Hamel 1990). Teece, Pisano and Shuen (1997:513) argued that the dynamic capability framework concerns "framing the strategic issues" and emphasising efficiency. Moreover, Teece, Pisano and Shuen (1997) stated that competitive advantage requires an ability to exploit the internal and external specific capabilities with appropriate innovation.

The Dynamic Capabilities Framework (DCF) is shaped by three dimensions: managerial and organisational process, path dependency and asset positions. The conceptual framework can be seen in Figure 4.2.

.Figure 4.2. A Dynamic Capability Framework (DCF) (Teece, Pisano and Shuen 1997).

The essence of dynamic capabilities (DC) is about adaptability, integration and configuration of internal and external factors: resources, skills and competencies within a dynamic environment (Teece and Pisano 1994). The dynamic environment is referred to a situation of firm's organisation to reshape and reconfigure assets from existing condition and responding technological changes and market (Teece 2007). The framework was first developed in 1997 and it has drawn increasing attention of management scholars in strategic management (Teece, Pisano and Shuen 1997, Teece, 2007). In a decade after of the development of DC, enormous researchers provided several alternative concepts defined by the nature, specific role, relevant context, mechanism, heterogeneity, outcomes and purpose of dynamic capabilities (Barreto, 2010).

Further, Barreto (2010) stated that DCF considers the capabilities or ability as the key role in strategic management. The definition of capacity in DCF also corresponds not only to the ability to perform tasks but also establishing in a routine by

acceptable manner (Helfat *et al.* 2007). Other scholars identified DC as specific and identifiable process (Eisenhardt and Martin 2000), and stable pattern in collective activities (Zollo and Winter 2002). The DC has the specific role to change the internal component of a firm, although particular changes can be different in terms of resources, routine and capabilities (Eisenhardt and Martin 2000, Zollo and Winter 2002, Zahra *et al.* 2006, Helfat *et al.* 2007).

In regard the environmental relevant context, the concept of DC is developed in commercial context where the technology changes as a part of the industry system (Teece 2007) In addition, Teece (2007) stated that the concept of DC can be achieved through the poor of technological development and managerial activities in high-velocity market. In contrast with Eisenhardt and Martin (2000:1110), the concept of DC exists in moderate environment, as Zollo and Winter (2002) namely a term "lower rate of environmental changes".

The other concept of DC were emerged by economy perspectives. The DC emphasises the learning mechanism as the component of creating competitive advantage (Zolo and Winter 2002). To some extent, there are two conditions that learning mechanism from experience should be relevant for established organisation rather than the new ventures by improvisation process (Zahra *et al.* 2006). The degree of heterogeneity applied by the root of RBV. Heterogeneity is uniqueness that relevant with concept of path dependency to develop dynamic capabilities. In contrast, the commonalities raised as the consideration in effective way to achieve the tasks as a best practice (Eisenhardt and Martin 2000). However, commonalities is inconsistent with pathdependent process, where there are no such thing as capabilities homogeneity across the firm (Barreto 2010). In other words, DC still idiosyncratic in the details of arguing commonalities assumptions. From the beginning, formal publication of DC, Teece, Pisano and Shuen (1997) stated that the framework has a direct relationship to a firm's performance. In line with the Teece, Zollo and Winter (2002:341) also has the same thought of direct link DC to performance with different way by "superiority and viability" for their survival in the environmental changes. Further, Zott (2003) arguing that firms which has identical recipe of dynamic capabilities actually never has similar

resources. Hence, a different resource provides various level of performance. The other thought of indirect link DC to performance also echoes by quality of substantive capabilities (Zahra *et al.* 2006) and opportunity cost (Winter 2003).

The DCF comprises static and dynamic elements. The static element taken from the argument of RBV literatures. There are five limitations derived from strategic management literature (Priem and Butler 2001). First, the static perspective is descriptive when the generating resources is limited explanation in the different situation and environmental comparison (Castanias and Helfat 1991). Second, the process to gain the competitive advantages through heterogeneity remain in "a black box" issue (Priem and Butler 2001:33). Third, as Priem and Butler (2001:33) stated that "some resources learnt as tacit knowledge is difficult to be manipulated". Thus, operational validity is empirically difficult to achieve. Fourth, the static element corresponds to resources as independent variables and competitive advantage as dependent variable. In operationalising these variables, Priem and Butler (2001) argued that the resources-based variable insignificantly contribute to strategy research. Finally, the superior performance from valuable resources is not difficult to identify. Meanwhile, the dynamic element concept was taken from the approach to integrate the resources over time and enriched by the capacity and capability across the organisational or managerial impact (Teece, Pisano and Shuen 1997, Barney 1991, Priem and Butler, 2001).

The key strength of DCV is its adaptive manner in obtaining competitive advantage, either from internal capabilities and external factors. However, there are few weaknesses of DCV including lack of clarity of the concept to implementation, oversimplification of dynamic changes in the environment and less support from empirical evidence (Arend and Bromiley 2009). In another view, Eisenhardt and Martin (2000:1106) argued that "dynamic capabilities are necessary, but not sufficient, condition for competitive advantage". In addition, the adoption of long-term concept of RBV significantly achievable in high velocity markets, but the strategic challenge in DCV in terms of time to sustain the temporary advantage is unpredictable. In contrast,

Helfat and Peteraf (2009) argued the theoretical foundation of DCV is identifiable and rooted in RBV. The characteristic of resources in construction industry is a complex issue as they are determined by multiple stakeholders and organisational capabilities. Although DCV relates to the performance, the key strategic issues in managerial aspects are path dependent and how integrative process to be achieved in competitive advantage product. The original concept of DCV cannot be generalised directly to the activities in construction as the DCV was adopted from industrial management, where organisational routines and path dependency has different activities and stakeholders involved. In construction, particularly at project level, routines are achieved by continuous improvement across the project and path dependency mostly obtained from individual experience rather than collective approaches.

The body of knowledge in the Dynamic Capability View is influenced by two prominent seminal works, Teece, Pisano and Shuen (1997) and Eisenhardt and Martin (2000). Most of general conceptions of dynamic capabilities from Teece, Pisano and Shuen *(*1997) and Eisenhardt and Martin (2000) focus on the organisational perspective, in terms of managerial process and roles in routines as portrayed in the Resource Based View (Peteraf, Stefano and Verona 2013). The differences between these perspectives lay on three aspects, namely: boundary conditions, sustainable advantage, and competitive advantage (as presented in Table 4.1.).

Table 4.1. Standpoint of Conceptual Framework from Prominent Research in Dynamic Capabilities (adopted and modified from Peteraf, Stefano and Verona 2013:1394).

First, the boundary condition is determined from the central question behind the construct of framework dynamic capability, that is, regarding how organisation (i.e. enterprise) "can attain and sustain a competitive advantage" (Teece, Pisano and Shuen 1997: 509, Peteraf, Stefano and Verona 2013: 1393). Second, sustainability is concerned differently in regard to the capabilities sources. The ability in competition-based environment underlines the dynamic capabilities to achieve a new formulation for competitive advantages (Teece, Pisano and Shuen 1997). Eisenhardt and Martin

(2000:1110) argued that dynamic capabilities are viewed as "source of competitiveness" rather than as competitive advantage. Third, in the moderate market environment, competitive advantage is enacted as the best practice. Nevertheless, dynamic capabilities commonly exist in the key feature, and yet are insignificant for competitive advantage (Eisenhardt and Martin, 2000). The view is quite contrary to the other reason that heterogeneity of capabilities refers to rareness and potentially establish strategic role as a competitive advantage (Teece, Pisano and Shuen 1997).

In this research, DCV is considered to have more advantages than Porter's Five Force framework and RBV because of four reasons. First, DCV can explain the dynamic nature of construction in the context of Indonesian local authorities. This framework is enacted in the dynamic environment and is more integrative in terms of approach, managing assets, corporate management and enabling the previous experience and networking to achieve a project success. Second, the DCF will be adopted as an initial concept for this research as it represents the nature of construction business where the process to achieve project success draws during the project life cycle and path dependency was associated with experience among stakeholders. Third, the initial framework was also adopted as a template in the qualitative analysis method to assess key stakeholders' behaviour at project level. The assessment through model interaction, which is applied from dynamic capabilities theory is reification of the behavioural model of interaction among local authorities, contractors and end-users (LACU). Finally, the strategic approach to enhance sustainable practices in local public building projects could be a manifestation of internal and external capabilities to overcome the environmental changes and to sustain competitive advantage. The local government context represents a dynamic environment, in terms of local budgeting arrangement and politic in organisation hat impact on the completion of construction projects.

The concept of Framework of Sustainable Dynamic Capabilities (FSDC) in a construction context can be operationalised into three elements of dynamic capabilities, namely; (i) managerial and organisational process (coordination/ integration, learning, reconfiguration and transformation), (ii) assets position, and (iii) path dependencies. The following sections explore the justification of the FSDC in relation to local government studies.

(i) Managerial and organisational process

Managerial style is determined by organisational structure emerging from particular resources, competence and routines. Moreover, the learning process is also an important aspect that informs how the leaders can influence their members through the internal and external environment.

- Coordination/ Integration

  According to the organisational lens in construction, Shirazi *et al*. (1996) found that a/the delegation approach would be favoured in the decentralisation of authorities within complex environments. It is similar with cases in public building projects. The survival of project organisation is challenged when facing high-perceived uncertainty. In this case, a project manager should consider coordinating the internal resources.

  There are various types of managerial style in an emerging organisation based on the local conditions. However, a/the price control system is supposed to be the main consideration of contractors and local authorities with regard to the success of the building construction project. Thus, effective and efficient aspects could be achieved by internal coordination or integration (Teece & Pisano 1994, Aoki 1990).

- Learning

  Learning is an individual and collective process in an organisation. Learning in this regard is not just individual learning in the traditional form, between student and teacher; it is more about understanding a/the process in a complex situation (Levinthal and March 1994, Mahoney and Pandian 1992, Teece, Pisano and Shuen 1997). Dynamic capabilities view refers to the coordination of multiple parties, who have opportunities for inter-organisational learning. In the local authority context, collaboration among stakeholders is a learning process, including a strategy to reconfigure the current routine to deal with the strategic issues through partnership (Matthews 2014).

- Reconfiguration and Transformation

  In line with the value creation in dynamic capabilities view, there is a need to

reconfigure the organisational structure and to adapt to the dynamic environment either by internal (among organisation members or business activities of company) or external transformation (i.e. market situation or constituents) of managerial aspect (Amit and Schoemaker 1992, Teece, Pisano and Shuen 1997). Teece and Pisano (1994) argued that the capacity to enable the reconfiguration and transformation should be learned by repetitive behavioural changes, because more practices means they are more reliable to accomplish and refine the quality of project tasks. Dynamic changes will affect operational cost, and the project organisation must "minimise the payoff change" (Teece and Pisano 1994:545). The skills to scan the environmental conditions would be a trigger for capabilities in adapting the particular requirement. In public building projects, delegation in certain tasks (Shirazi *et al.* 1996) and local autonomy will assist the process to reconfigure and transform complex situations (Teece and Pisano 1994).

(ii) Asset position

Considering strategic decision to gain competitive advantage, the dynamic capabilities view point to specific assets (technology, complementary, financial, reputation, structure, institution, and market assets) which can place firms in powerful positions in a competitive market. In other words, asset position plays important role for the sustainable construction business.

(iii) Path dependencies

Path dependencies refer to "historical matter" or track record developed from previous processes of learning (Teece and Pisano 1994:547, Teece, Pisano and Shuen 1997). Learning is recognised as a process to refine the routines by trial and error that occurs after evaluation and feedback. In addition, the most important part of path dependencies is the impact on the product. Teece, Pisano and Shuen (1997:523) argued that path dependencies exist on the "demand-side phenomena". In contrast to the original framework, this research intends to examine the strategic decisions in local authorities.

The initial concept of FSDC is developed based on the component of DC and sustainable practice in the project level as can see in Figure 4.3.

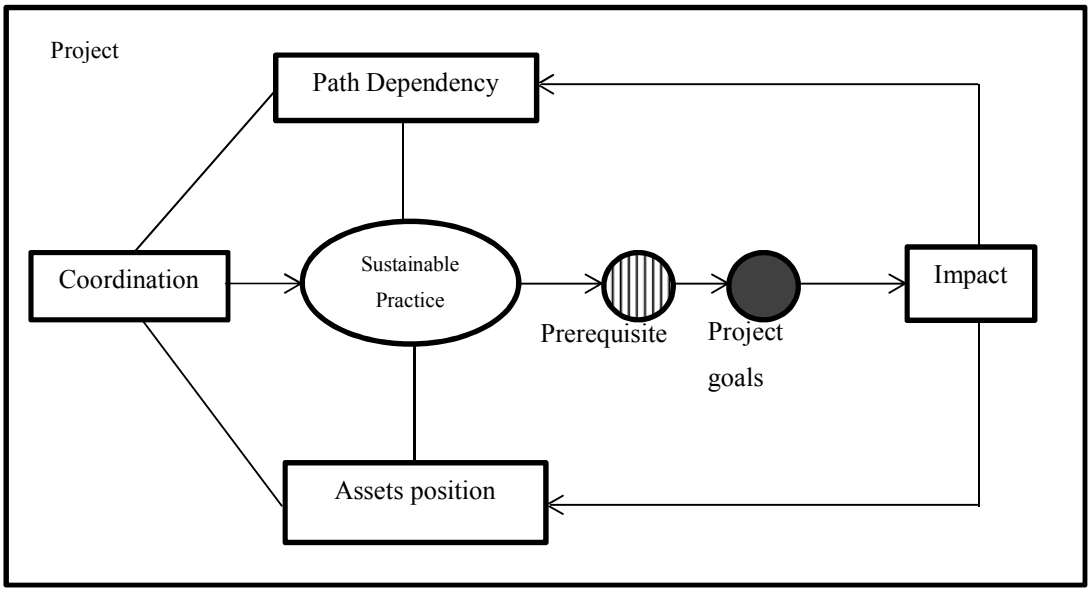


Figure 4.3. Initial Conceptual Framework Sustainable Dynamic Capabilities in Public Building Management in Local Authority

Dynamic capabilities framework is appropriate to explain the political instability in local authority's context. The readiness of implementation by local authorities could be the potential capabilities in governing public building management; therefore, it potentially becomes a source of sustainable advantage. However, the characteristics of activities in public building projects are complex, dynamic and hostile (Trinh and Sharif 1996; Shirazi *et al.* 1996). The abilities of building practitioners at different levels of authority would be a manifestation of competitive advantage by stakeholder interactions.

Preceding discussion about stand point of dynamic capability and initial conceptual framework has been framed from organisational perspectives that public building projects are established from a dynamic aspect in terms of key stakeholders (building practitioners and local authority as regulator) attention and interaction process (ontology). In addition, a strategic approach by dynamic capabilities framework attempts to ensure that project performance is in line with sustainability as the basis of inquiry into dynamic capability, and how organisations (i.e. contractor firms) "achieve

and sustain a competitive advantage" (Peteraf, Stefano and Verona. 2013:1389) in a particular condition (epistemology). However, regarding the sustainable performance at project level, this research needs to identify the strategies throughout the FSDC. Strategy in public building sector in local authority context is discussed in the next Section 4.4. The discussion of strategy is delivered in a coherent fashion with dynamic capabilities view in public sector management, and focuses on the strategy theory in public building projects at the local authority context.

4.4 Strategy in the Public Building Sector in Local Authorities

The debate of strategic-based approaches originally arises from market competition among industry sectors. This approach shifts from market competition to the internal resource modification (Porter 1980, Barney 1991, Peteraf 1993, Grant 1996). The main characteristics of public sector, which includes public building management, are required to public service that does not expect "direct compensation" from the end-users of services (Pablo *et al*. 2007:689). However, since sustainability principles are delivered via three pillars, that is, social, economy and environmental impacts, the public building projects still have a business entity by which profitability must be an aspect to be considered. Based on the strategic logic, Hall and Wolff (1999: 1116) identified five common principles that are relevant with dynamic capabilities in the context of public sector. First, the logic emphasises creative and inventive works due to "future creation". Second, it develops effect-exchange in collaboration activities beyond the traditional boundaries. Third, it focuses on "the future and long-term" visions. Fourth, it has dependency on "dynamic-context" and emphasis of "performance-based" rather than "cost denominator".

Moreover, in contrasting to the three core strategic approaches, capability logic would be the closest strategic logic to this research context. Hall and Wolff (1999) pointed out the principle of capability logic**,** which has similar echoes in public sector environment as presented in Table 4.2.

Table 4.2. Characteristic of Capability Logic

(adopted and modified from Hall and Wolff, 1999: 1117-1122)

Regarding the market condition, the strategy uses the economic setting based on the equilibrium law, and its purpose is to establish an incontestable position. Although a/the competition concept exists in public building projects, their management does not intend to compete the end-users (Pablo *et al.* 2007:689). Likewise, on the basis of public sector management, Llewellyn and Tappin (2003) stated that the capability logic is

consistent with resource-based principles in developing competitive advantage and reconfiguring resources. Within the sequence period in the formal planning (Armstrong 1982), managers in public sector institution will maintain the relationship under the power, control, protection and management through the specific resources and situations (Hall and Wolff 1999). Stakeholders in this consideration focus on value creation for investors due to available assets and capabilities in the boundary role through preventive activities to resources in the alliances. However, within the research context of public building project in local authorities, the fundamental problem still emerges, especially when the performance deals with public service in the long-term (Pablo *et al.* 2007). In facts, local authorities have a strategic role to formulate the strategic approach in the middle of situation, either involving local industry characteristic and dynamic capability to provide a strategic decision in the future, particular in public building projects.

Dynamic capabilities view consider the environmental changes and it also encourages the organisation's capabilities to reconfigure the internal and external competence in "rapidly change" environment (Teece, Pisano and Shuen 1997: 516). This research assigns the rapid change environment through the analogy setting in public sector that depends on the dynamic situation from political decision, whether in budgetary allocation or attitude of local leaders.

In organisational perspective, cooperation in research and development is a media of organisation to overcome their resource constraints. There are two motives of firm sharing: cost-sharing and skill-sharing (Sakakibara 1997). Cost-sharing has a limitation in competition, while skill-sharing may stimulate research and development's investment. In contrast with local government project, local contracting firms have a relatively small capital and lack of management in regard to motives, such cost-sharing and skill-sharing. The high number of small firms in total apparently leads to an unhealthy competition. However, Sakakibara (1997: 144) posited these two motives (skills and capabilities) to have important implication for management and public policy.

The concept of dynamic capabilities in the construction industry has been largely discussed in the strategy literature. In regard to the study approach from De Haan *et al.*

(2002), construction firms adapt the dynamic capabilities in a static manner by good traditions of resource based view (RBV). Green, Larsen and Kao (2008) argued that in the organisational context, very little consideration by dynamic capabilities approaches in governing routines to change their circumstances. According to the essential of dynamic capabilities, Teece, Pisano and Shuen (1997) argued that competitive advantages are gained through managerial approach and organisational process, otherwise from their learning process or pattern of routine as well as their best practice and consideration of asset position and established path. In line with Eisenhardt & Martin (2000), they posited that improvement in organisational performance is a dynamic process. That continuous process is derived from experiment and repetition as well. Contrary to Porter (1980), in a competition-based strategy, the change of local settings will create "an impedance rate" or opposing of new improvement (McNulty 2003). In addition, Pettigrew (1985) (cited in McNulty 2003:S43) posited that the changes could be legitimised in organisation authorities, due to "content" of changes, "context" of consideration and "process" of changes itself.

In the literature, dynamic capability in public sector management commonly focuses at the firm's levels (Teece, Pisano and Shuen 1997, Barreto 2010, Pablo *et al*. 2007). On the contrary, the public building projects at different levels of local authority consider multi-dimensional aspects, such as firms level in contractor's organisation, local authority in terms of budgetary management, and end-users of the building as the occupant. Furthermore, the different level of local authority introduces locality issues in governing public building management. In line with Pettigrew (1985), legitimised public building management at different levels of local authority is an apparent complex process. This process attempts to synchronise expectation among stakeholders being involved and management of resources. In regard to the research questions "Who are the stakeholders?", "How can they be brought together to support strategic approach?", "What are the relationships between stakeholders?" and, "How can they be measured?", those questions attempt to convey the sustainability issues through the actors and organisational changes. Thus, this research tends to gauge the sustainable practices in public building projects by employing the framework dynamic capability. Based on the

nature of building project management, the sustainability aspects will be simplified through assembly process, project life cycle. In that respect, the measurement of sustainable practices will be discussed through the perspective of project life cycle in Sections 4.5. and 4.6. The discussion aims to answer the research questions of "What are the relationships between the stakeholders?" and "How can they be measured?".

4.5 Measurement of Sustainable Practices throughout Project Life Cycle

The heart of any construction contract lies in the life cycle of the project (Patel and Morris, 1999). Sustainable practices of any project are dependent upon a clearly defined life cycle process. The process will detail every task and sequence the phases that will influence the performance of the project in its entirety. Wideman (2004) explored it from a historical perspective and discussed the essential aspects of the role of the life cycle in the successful completion of a project. From the synthesis of historical evidence, there have been a number of roles for the nature of the life cycle and its appearance. The project life cycle is a manifestation of formal planning within the context of "the scheme of operations" by particular stakeholders to gain successful goals throughout the stages of the tasks.

Based upon the Project Management Body of Knowledge (PMBOK 2008), the project life cycle consists of four phases, primarily beginning the project and following it up by organisation and preparation and by carrying out the project prior to the closure phase. Subsequently, along the life cycle process, two-dimensional aspects exist which guide the path of the process itself. During the process of the project life cycle, the degree of interaction among stakeholders, risks and uncertainties through the variability of cost and budgeting is reflected in the timeline of the project (PMBOK 2008). In addition, the life cycle process provides the product with many opportunities that are related, either through the project itself or as a by-product of the emergence of a new function, or a new model and features.

Different contexts in defining a project life cycle would be variable in tasks, but they must come from the same substantive matter in terms of structure. Numerous researchers in building management have various perspectives regarding the life cycle process. Towsend *et al.* (2012) studied the complex arrangement of working time within

the construction industry. The research demonstrated the complexity of tasks for the manager in dealing with flexible working times. However, the degree of flexibility and alteration would be a balancing factor in resolving the complexity of projects. Consequently, the working time arrangement will influence other aspects. For instance, economic factors, and the impact of radical changes such as from a five day week and the financial benefits affect each employee. As Towsend *et al.* (2012) argued, the case study of the five day working week is a valuable practice in balancing life and time within the complexity of the project scenario. In addition, Towsend *et al.* (2012:448) posited that "if that approach consideration is not included into project planning and enterprise bargaining stage of engagement, it is unlikely that changes will be anything more than incremental, inadequate and ineffective."

The other perspective focuses on the sustainability assessment across the project life cycle within the university building case (Thomson *et al.* 2011). Thomson *et al.* (2011) stated that the assessment will be a contributing factor as subjectivities for the decision making process, and also take proactive roles at the evaluation stages in identifying sustainable tasks in relation to stakeholder's engagement and the phases of the life cycle itself. Indeed, the key assessment process was adopted from "the RIBA plan of works" into five assessment phases as seen in Table 4.3.

Within the strategic management field, activities of formal planning are in the form of sequential stages, from specifying objectives, to generating strategies, evaluating alternatives and monitoring results to seek commitments (Armstrong 1982). This formal planning has a similar analogy with project life cycle. Through the project life cycle, stakeholder's improvements or their activities are similar to building project management.

Table 4.3. Key assessment phases across the life cycle (Thompson *et al.* 2011:146)

However, the strategic aspects in this research need to consider the success of the project based upon the level of local authority within the context. A strategic approach to enhance sustainable practices in public building projects at different levels of local authorities is formulated from an initial conceptual framework. The framework based on the dynamic capabilities theory that is adapted in public building management, to give a sense of novelty, as discussed in Section 4.4. tThis attempts to operationalise the strategic approach and requires a diagnostic approach for the interactions between key stakeholders (Local Authority, Contractor and End-user or LACU), particularly in

public building management at different levels of local authorities. This research suggests that an interaction model between key stakeholders (LACU), with respect to time dependence of the strategic approach, and the measurement of sustainable practices is considered by a project life cycle. Hence, the dimension of time including the interaction amongst key stakeholders in public building projects will represent strategies by the project management perspectives and tactical aspects to secure the project's success throughout the project tasks. The detail of the LACU interaction model will be discussed in Section 4.6. to gain an in-depth understanding in terms of the background and theoretical basis. Prior to this, the structure of the model, model assumptions and validations will be discussed.

4.6 Interaction Model of LACU

4.6.1 Background

This research employs the LACU model to address these research questions. The LACU model is developed from perceptions of public building practitioners and field observation at the case study. The first study (in Chapter 2) revealed that practitioners emphasise the nature of diversity in accommodating sustainable practices due to the job roles. Contractors are enacted as the central consideration in public building projects, to promote either sustainable building or major issues in achieving construction project success (Tan *et al*. 2011, Magdani 2013). As stated in Chapter 3, the research of public building in Indonesian local authorities tends to focus on the project organisational level, in which three actors predominantly are involved for the project activities: local authority is representative of local government, contractors role as the primary executor of the projects, and end-users of the building as benefited party. Thus, according to the organisational context of public building projects, this research will demonstrate the model as a triangular interaction between local authorities (LA), contractors (C), and building end-users (U) to determine the appropriate phenomena during the project life cycle. These can be seen in Figure 4.4.

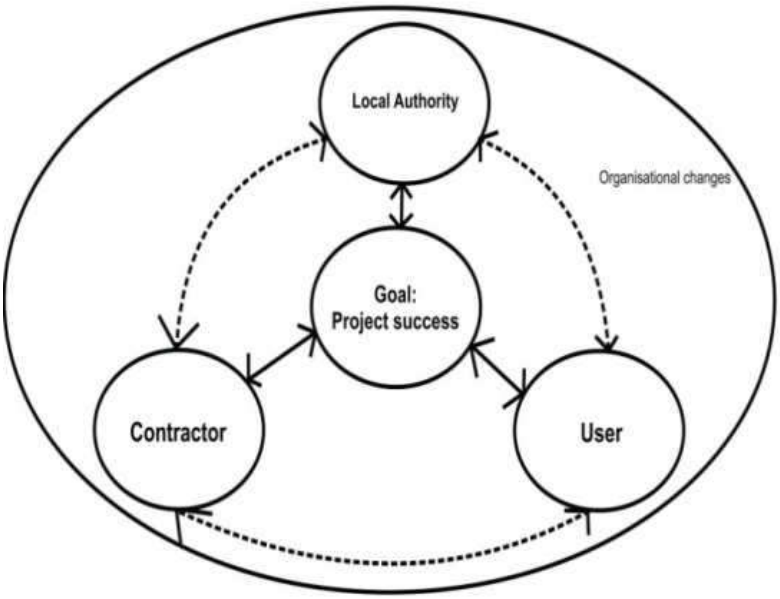
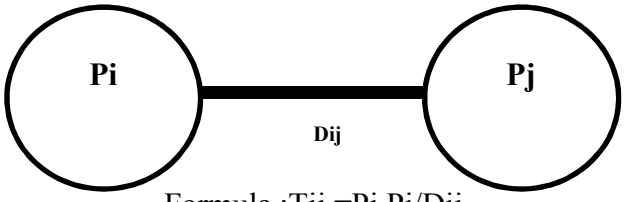


Figure 4.4. Initial Model LACU

The LACU model is inspired by a gravity model adopted from transportation management field (Haynes & Fotheringham 1984). The activity of building projects is a movement process among multi-sources and stakeholders at a particular site. The interaction model as presented in Figure 4.4. is a manifestation of the spatial interaction which encompasses any movement over the space. The movement is simplifying the human process (Haynes and Fotheringham 1984:9). In this interaction model, this research will adopt the analogy to figure out the triangular behaviour (LACU Model) throughout the project life cycle. This model is adopted to simulate the phenomena in public building practices. The interaction model can be seen in Figure 4.5.



Formula :Tij =Pi.Pj/Dij

Note: Pi = Power/ level of implementation of major tasks of a/the project life cycle by stakeholders- i; Pj = Power/level of implementation of major tasks of project life cycle by stakeholders- j; Dij = distance of communication intensity (interaction degree) emerged by interaction between Pi and Pj.

Figure 4.5. Analogy Model LACU (Haynes and Fotheringham 1984)

In general, the goal of an/the interaction model is to increase the likelihood of project success in public building projects. However, the nature of uncertainty still exists as the boundary condition. It means instability project's goal seems influencing the performance of the project success. The focus of the assessment model is, therefore, on the pattern of interaction at different levels of local authority. Distortions of the project goals will be manifested as a/the dynamic intensity of interaction due to major tasks during the project life cycle. Regarding the theoretical approach of the model, it will be described in the following Sub Section 4.6.2. The mechanism of interaction will be discussed in Section 4.6.3., and model assumptions will be described in Section 4.6.4.

4.6.2 Theoretical Basis

The interaction LACU model reflects the interaction among stakeholders in public building management. The public building projects' stakeholders come from multidisciplinary parties. These interactions are established from interdisciplinary practitioners that analogue with the nature of strategic management theory (Bettis *et al.* 2014). In this respect, the theoretical basis of the LACU model departs from the organisational theory and sustainability concepts in the public building sector. The organisational theory is empirically adapted according to the local government study, particularly in the Indonesian local authority context.

Organisational theory by interpretive approach suggests an underlying "certainty" from social constructions and confronting the ideological practice (Morgan 1990:19). A "certainty" refers to individuals and their social life. On one hand, organisation is an open system that environment is independent and real in social interactions. Thus, Morgan argues that a meaningful role-play in enacted power and controlling the situation have specific implications for organisational practices. However, in organisational reality, the different perspectives among members of the organisation may result in innovation. It might even be able to deliver an idea of changes by other means (Morgan 1990). Epistemologically, organisational life is a continuous process of the construction of social reality. Reality in an organisational context is "intersubjective phenomena" which is attributable to rules and roles (Morgan 1990:19). Thus, the LACU interaction model, in the context of local authority, is in line with the paradigm in

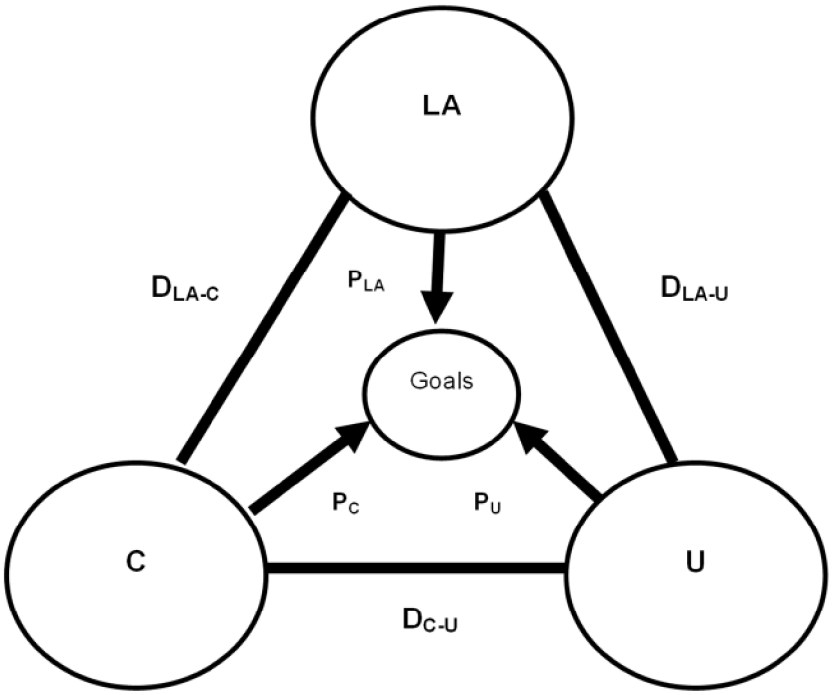
project management (Pollack 2007). Interpretivist levels emphasis social process and learning among an/the organisation's members (Burrell and Morgan 1979; Crawford and Pollack 2004).

In the decentralisation context, local authorities as regulators have roles that are both enforcing and influencing in governing the public building management (Osborne and Gaebler 1992). The term 'local authority' refers to general arrangement in housing and public services at the different levels or tiers (Gilbert *et al*. 1996). Local authority in this research is a/the manifestation of an organisational model, particularly in public building projects.

A stakeholder map has been used to identify the pattern of symbolic interactions that influence project performance (Olander and Landin 2005, Morgan, 1990). There are various kinds of methods to develop the stakeholder map. Olander and Landin (2005) reported four major findings from the interaction pattern of stakeholder mapping. First, the project performance is potentially influenced by qualitative aspects rather than the quantification of goals (technology and economy). Second, an influential factor of stakeholder that is apparent as different argument is clearly defined in the real implications with regard to trustworthiness. Third, the nature of a/the stakeholder's analysis should be dynamic and the best way to identify the behavioural characters is suggested throughout project life cycle. Finally, to elaborate the specific impacts due to variability of stakeholder interactions, the decision-making should be considered in a proactive fashion within the managerial process. Thus, the LACU assessment model refers to philosophical consideration from stakeholder mapping with a different approach in public building project tasks. The dynamic aspect of the key stakeholders (LACU) is measured using a qualitative interpretation among building practitioners. Therefore, the LACU model interaction is representative of the stakeholder engagement to enhance sustainable practices as well as propensity of project success at different levels of local authority. In addition, the determination of interaction needs to capture of the pattern of intensity from the model. Further discussion regarding the mechanism model is presented in Section 4.6.3.

4.6.3 Structure of the model

The interaction among stakeholders (within LACU) could be captured from the process of semi-structured interviews and/or document analysis, and combined with field observation. The model depicts the balanced interaction (D_{LA-C}; D_{C-U}; D_{LA-U}) and power for achieving the goals of a public building project (PLA; PC; PU). The interaction and power refer to the intensity of the interaction among three key stakeholders (LA-C-U). The goal refers to the project success which is reached via a strategic approach (See Figure 4.6). The power in the model is also representing the function of engagement of each Node (LA, C, and U) to the major tasks (see Table 4.4.).



Notes: Node or subscript LA = Local Authorities; Node or subscript C = Contractors; Node or subscript U = End-users; D = distance of communication (interaction) between two Nodes; P = Power as representative of capability and ability to influence the internal Node to gain the goal (PL, PM or PH)

Figure 4.6. Model LACU

Table 4.4. Major Task of Project life cycle (Wideman 2004)

Range of level interaction is adopted from risk analysis weight indicator, where Low= 0.1, Medium= 0.5 and High= 1.0 (Zou and Zang 2009, Shen *et al.* 2001). Based on the assumption, Low means no significant engagement through the tasks performance, Medium means the engagement is insignificant, and High means engagement is based on minimum requirement and contributes to project performance. Details for the project tasks are presented in Table 4.4. Performance of Model LACU by Life Cycle Phases (Individual Case) has also been formulated as can be seen in Table 4.5.

Table 4.5. Formula of Determination to Interaction Model

Code	Task activities	Stakeholders: LA/C/U					
		L	wL=0.1	M	wM=0.5	H	Wp=(L.wL+M.wM+H)
1	Task 1	…		…		…	Wp (1)
...	...	...		...		...	...
n	Task n	...		...		...	Wp (n)
Total task		a		b		c	
	Intensity	PL=a/n		PM=b/n		PH=c/n	I = Wp total/n

Notes: w= weight factor, n = task sequence-n, Wp= level of interaction, I= Intensity of interaction and Dij= = degree of interaction among LA, C or U, where i or j indicates two stakeholders whose interacted.

4.6.4 Model Assumptions

This research is initially developed from the prevailing assumption of strategic management of building projects by local authorities. Based upon the project organisational perspective, there is a link between project success and high level of capabilities in organising resources . In the content perspective in strategic management, since environment changes rapidly, competitive advantage is derived from continuity development and capability of reconfiguration of firm specific assets (Teece, Pisano and Shuen 1997, Teece 2007). By applying the analogy between the gravity model and the LACU model, the basic assumption of Newtonian formula in physical science can be achieved from correlation between two masses as a process of communication in social reality. The gravity model considers attractiveness of people and goods to certain activity as transportation or mobility through particular transportation modes (i.e. any vehicle, motor cycle, and bicycle). This research attempts to create the analogy of public building projects and Newtonian formula by replacing the masses of object with mobility of people and goods directed by particular stakeholders. The interaction among stakeholders of public building projects is defined as a process of communication to achieve project goals. Therefore, in a research context, the interaction seems to be more

artificial as this model replaces the communication among stakeholders**,** with communication between respondents and researchers. Thus, this model will deliver the perception of interviewee and give coding based on categories, such as local authorities perspective, contractor or end-users. Through 24 semi-structure interviews, this study will collect data on the perceptions held bybuilding practitioners with regards to the emerging concept of dynamic capabilities. Finally, a model of interaction will be developed based on four assumptions regarding the LACU model of assessment for sustainable practices throughout project life cycle phases.

- Assumption 1:

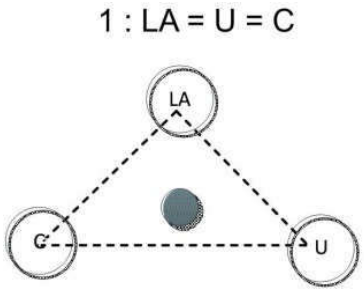


Figure 4.7. LACU Model Assumption 1

In ideal conditions, equal interaction is established in equilibrium condition among stakeholders' expectations (see Figure 4.7).. There is a presumption that satisfaction between Local Authorities and Contractors and End-users is equal. a/The Conditional rule will be achieved whenever each party deals with a particular degree of expectation and perception of the project success.

- Assumption 2:

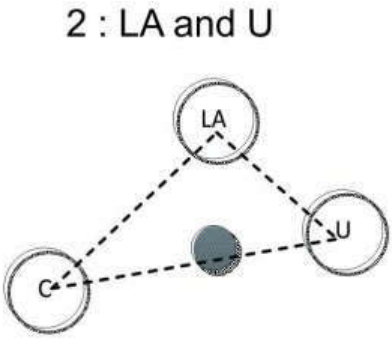


Figure 4.8. LACU Model Assumption 2

Interaction between Local Authorities and End-users is equal to Local Authorities

and Contractors (see Figure 4.8.). Local authorities are enacted as mediators between Contractors and End-users. Local authorities legally will enforce to communicate local policy throughout government regulations or project initiatives. This interaction works providing LA and U have similar expectations to develop a better design implementation.

- Assumption 3:

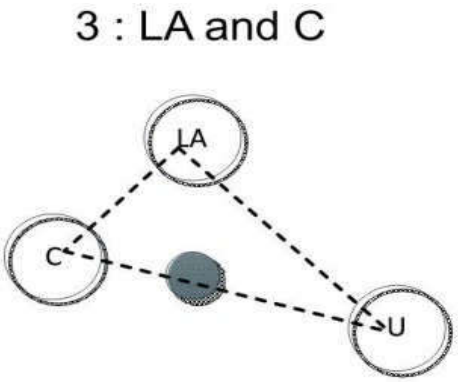


Figure 4.9. LACU Model Assumption 3

Interaction between Local Authorities and Contractors is equal to Local Authorities and End-users (see Figure 4.9.). Local authorities are enacted as regulators to establish a contract with a/the Contractor. End-users are enacted as passive actors. Local authorities legally will communicate the project tasks and rules to Contractor based on formal planning or projects initiatives. This situation happens as long as LA and C have a similar expectation to develop a better design implementation.

- Assumption 4:

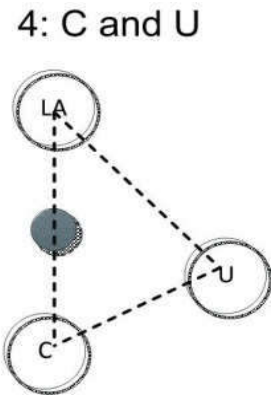


Figure 4.10. LACU Model Assumption 4

Interaction between End-users and Contractors is equal when compared between

End-users and local authorities (see Figure 4.10.). Local authorities are enacted as a mediator between contractors and end-users. Contractors will convince end-users regarding the construction process and business value to deal with. Once End-users (market traders or building occupant) have accepted the contractors' offers (design or price), Local authorities provide a Memorandum of Understanding (MoU) or mutual deals for Contractors. End-users have the authority to approve or just make an overview (preference) on the design that is provided by contractors.

Based on these four assumptions, the LACU model will be applied to the selected case study to identify the pattern of project success at different levels of local authority due to the intensity of interaction (PH=High interaction, PM=Medium interaction and PL=Low interaction).

4.6.5 Validation of the Model

Project performance during the project life cycle enables LACU model to indicate the sustainable performance (Thomson *et al*. 2011). The means attempts to capture the level of understanding of sustainable performance, whether by social-economic conditions and environmental impacts (El-Haram, Walton and Horner 2007). In addition, Thomson *et al.* (2011) stated that performance indication of sustainable building is not just a technical base, but it should be more proactive across the life cycle phases. The simulation of the LACUmodel is across the interpretation among interviewees due to major tasks which is adopted from Wideman (2004) and it can be seen in Table 4.4.

This research will simulate the LACU model to identify the project success of public building projects among different levels of local authorities. The outcome of the LACU model assessment will demonstrate the intensity of interaction among Local Authorities, Contractors and End-users during the project life cycle at the different levels of local authorities. The validation will be undertaken using a performance-based approach using criteria of completion; satisfactions of stakeholders have also been captured in semi-structured interviews and field observations, supported with document analysis.

4.7 Research Approach

Methodological assumptions are established according to the ontological and epistemological assumptions in the preceding sections. This part concerns a set of guiding approaches to understand the strategic mechanism for enhancing sustainable practices in public building projects at different levels of local authorities.

The epistemological assumptions about the strategy that are adapted from the dynamic capabilities framework (initial framework) is applied initially to formulate the connection between assumption and data collection, to understand the nature of sustainable practices in public building at different levels of local authority. To ensure theoretical coherence, the initial framework will be adapted to the context of the public building project with a new framework to enhance sustainable practices during the project life cycle. The resulting framework is a Framework of Sustainable Dynamic Capabilities (FSDC). There are four stages that will guide the understanding the strategic approaches to enhance sustainable practices in public building. The objectives by each stage are as follows:

- Stage 1: problem identification and research question
  This stage comprises the research background and problems, review of literature on local public building projects, and a discussion on the methodology used.
- Stage 2: It identifies the case study, which represents the problems of research and presents empirical data. Data are collected using the previously discussed methodology.
- Stage 3: Analysis of research data will be used to develop a strategic approach and an interaction model. Finally, the assessment model of LACU and developed framework of sustainable dynamic capability (FSDC) will be validated through a follow-up interview with selected key respondents.
- Stage 4: The key findings of the research will synthesise the contribution to knowledge. Finally, recommendation of the developed framework of SDC (Sustainable-Dynamic Capability), including the grand design of a strategic approach of public building management in local authorities will be presented.

The research stages diagram is presented in Figure 4.11.

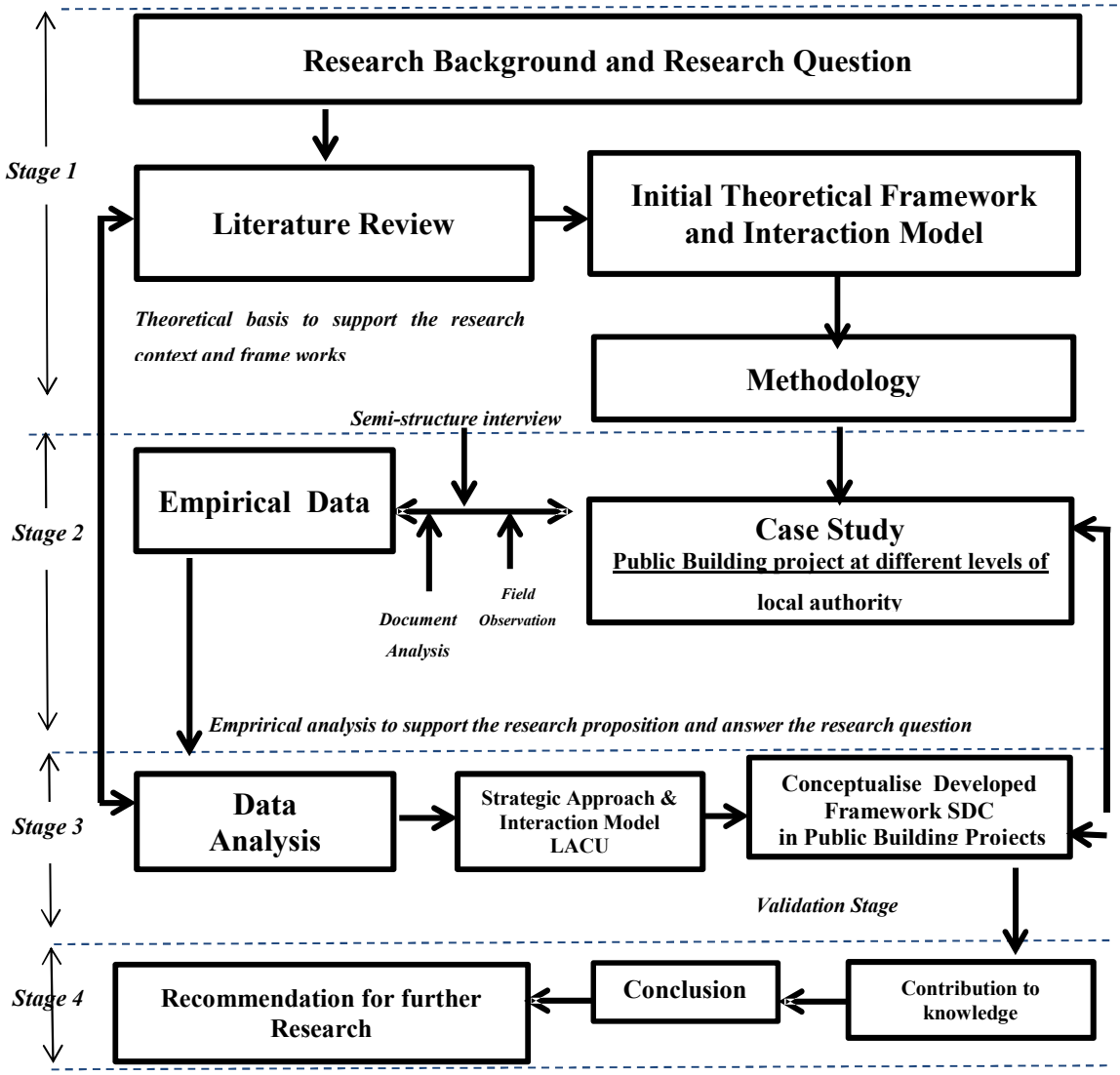


Figure 4.11. Research Stages

4.8 Summary

This chapter discusses a conceptual framework and an interaction model used to address the research question. The initial framework is developed by dynamic capabilities framework to enhance sustainable practices in public building projects. By applying research theories to an empirical context, this research provides a revised methodological approach to address questions in this field that reviews the ontological and epistemological assumptions. This approach can provide a contribution to

knowledge on the nature of sustainable practices in public building projects, and thus, revising current epistemological assumption in this research area. In other words, methodology provides a set of guiding approaches to research the strategic mechanism for enhancing sustainable practices in public building projects at different levels of local authorities.

In light of strategic management in public sector, the review of strategy at local authority's context examines the roles of public building projects. The issues of strategic logic and dynamic capabilities are also discussed. Interaction among key stakeholders will be part of strategic approach to enhance sustainable practices in public building projects.

Based upon the importance of strategic approach in public building management, this research considers the measurement of the social process within project organisational activities to address the curiosity of sustainable practices by key stakeholders: Local authority, Contractors and End-user. A strategic approach is to examine a case study using the conceptual framework of dynamic capability through three aspects: managerial and organisational process, assets position, and path dependencies. The review of literatures through dynamic capability framework concludes the standpoints by this research. The framework of dynamic capability, which applies to the dynamic of political environment at the local authorities' context, can be a source of sustainable advantage due to a readiness of implementation at different levels of local authorities. In addition, the framework also can be a source of competitive advantage, depending on the intensity of interaction among the stakeholders, who are involved in the project organisational context. Therefore, the competitive rules employed by public building sector exist in this regard.

In regard to assessing the intensity of interaction between Local Authorities (LA), Contractors (C), and End-users (U), this research proposes a tool demonstrated in Triangular Model LACU. LACU model was developed from investigation of the perception of building practitioners and field observation on the location of study. Within the organisational context of public building projects, this research will demonstrate the triangular relationship between Contractors (C), Local Authorities (LA) and building End-users (U) in order to determine the interactions between parties when

undertaking their tasks throughout the project life cycle. Framework of Sustainable-Dynamic Capabilities (FSDC) is developed and applied to enhance understanding of sustainability provisions in public building development in Indonesian local authorities. The analysis of roles and responsibility of relevant stakeholders using the framework can provide a balanced mechanism to facilitate the implementation of sustainability actions by relevant stakeholders.

CHAPTER 5 Research Methodology

5.1 Introduction

In order to address the research aim, this chapter will provide three sections: research strategy, data collection, and data analysis. Considering the methodology, this research will review the philosophical position in the sociological perspectives to interpretive paradigms. A qualitative research method will describe the method of data collection, followed with analytical reviews to empirical evident. In regard to the strategy to answer the research questions, this study adopted phenomenology approach through semi-structured interviews and case study method.

5.2 Research Strategy

5.2.1 An Interpretive Paradigm

In terms of the method to understand reality, this research using an interpretive paradigm to address the research question.. The philosophical assumptions are fundamental beliefs by researchers, either implicit or explicit, and are commonly adopted to guide natural inquiry that emerges from the phenomena being studied (Burrel and Morgan 1979, Guba 1990). In social science as conceptualised by Burrel and Morgan (1979), the research inquiry could be investigated by philosophical assumption: ontology, epistemology, human nature and methodology. Ontology is questioning the nature of reality; meanwhile, the epistemology is questioning the relationship between the nature of researcher and the knowledge being studied. The question about human nature is commonly about the interaction relationship between human and their environment. Methodology is questioning the researchers in the attempt to acquire knowledge throughout assumptions.

In sociological paradigms, Burrell and Morgan (1979) extended the perspective dimension on the social reality throughout four quadrants: functionalist, interpretive, radical humanist, and radical structuralist. The four dimensions of sociological paradigms encompass two different assumptions of the nature of social science: Subjective-Objective and Regulation-Radical Change as can be be figured out in Figure 5.1.

Figure 5.1. Sociological Paradigm (Burrell and Morgan 1979)

In the subjectivist approach, a researcher can treat their research by subjective reality and it also focuses on relationship and regularities (realism-positivism). Otherwise, the methodological approach in subjectivist focuses individual experience, whether the generalisation of the social pattern particular in specific context from the case being observed (nomothetic). Regarding the philosophy of human nature that every single decision is the consequence of antecedent or prior condition (determinism). Contrary to the objectivist approach, the researcher focuses on object outside the human or subject (nominalism), and the approach is also to understand the social world by interpretive method (anti-positivism). Meanwhile, the research method in objectivism concerns on individual cases, where daily life is representative or portrait of community. The emphasis is on the description of subjective analysis and the understanding of distinctive individual characters (ideographic), and implies human freedom of choices in particular actions (voluntarism). To see the positioning between Subjectivist and Objectivist through the naturalistic inquiry, the scheme is presented in Figure 5.2

Figure 5.2. Subjectivist and Objectivist Reality in Sociological Paradigm (Burrell and Morgan 1979)

This research explored the sustainable practices in Indonesian public building projects using three case studies, namely: (1) Revitalisation of Traditional Market Building, (2) University Building Project, and (3) Building Investigation. The problems which are articulated by practitioners are not always able to reveal the actual practices; the problems should entailed with innate perceptions.

This research proposed that interpretive paradigm is more appropriate in attempting to establish in-depth understanding of subjective reality of problematical issue in public building projects at different levels of local authority. Considering the social process on the project life cycle is carried out by human factor, in terms of interaction among authorities (local government), contractors, or end-users (or occupants), interpretive paradigm concerns the meaning and accommodating the social reality (Seymour and Rooke 1995, Seymour, Crook and Rooke 1998). In summary, interpretive paradigm is appropriate to address the research questions. From the preceding discussion of conceptual framework and interaction model (Chapter 4), the research assumptions have been established. Thus, the research assumptions are follows:

- *Ontological assumption:* The public building practitioners' beliefs in the advantages of sustainable practices in public building project emerge from "out there" (nominalism) and the perceptions are commonly constructed and created

by experience and individual capabilities of the participants.

- *Epistemological assumption:* What can be known about a strategic approach by dynamic capabilities framework attempts to ensure that interaction among key stakeholders will influence the sustainability of public building management practices between the researcher and public building practitioners by providing an alternative perspective (constructionism or anti-positivism).
- *Human nature assumption:* Public building practitioners have autonomy and freedom in choices for sustainable practices in public building projects activities (voluntarism).
- *Methodological assumption:* Various perceptions of strategic approach for enhancing sustainable practices in public building projects are constructed and interpreted from social reality. The perceptions are compared and contrasted in coherent discussions. The aim is to map out the different approach as a pattern at different levels of local authorities, and to provide a consensus perception from developed framework in a much comprehensively informed manner rather than in the previous research (ideographic methodology).

  Nature of society: the research views the sustainable practices on the sociological ambient, which is considered in the status quo, is hierarchical of local authority, and harmonises the key stakeholders being involved.

5.2.2 A Qualitative method

Qualitative research methods are necessary to understand the social construction of meanings or making sense of people, environment, and experiences. A qualitative method is defined as guidance to design and implement the research which is employed by the question why or how of the human behaviours, experience, and complex processes (Merriam 2009). Section 5.2.1., has indicated that the research in public building management exists in the interpretive paradigm that refers to the qualitative method. The research of public building management in the context of Indonesian local authority questions, "How can different levels of local authority enhance the sustainability of building management practice by the adoption of appropriate strategic approach?" Human is used as an instrument in a way to answer the inquiry of

naturalistic paradigm (Lincoln and Guba 1985). In the nature of investigation among human activities, this research would look at the strategic approach in public building management for enhancing sustainability in practices by field observation and document survey. The qualitative method in this research was conducted through semi-structured interviews, while the interpretation of the meanings was through the transcripts of interview with the key stakeholders (local authority, contractors and end-users) in regard to the sustainability in public building projects at different levels of local authority. The method requires the supporting evident from project documents and reputable information, which are relevant to the case study.

There are many strategies in qualitative research, but the similar phenomena need to suit in a particular method. The case study is more appropriate as a research method, rather than as phenomenological study or grounded theory. The comparative strategies for qualitative research are described in Table 5.1.

Table 5.1. Strategies for Qualitative Research (Adopted from Creswell 1998: 65)

The scholars in strategic management point out the dynamic capabilities study mostly undertaken empirically, by 70 percent survey and case studies (Arend and Bromiley 2009). The archival strategy massively employed on dynamic capabilities more than a decade. Barreto (2010) stated that around this decade empirical study of dynamic capabilities using the documentary survey. Moreover, Ketchen, Boyd and Bergh *(*2008) found from historical content of Stategic Management Journal between 1980-2014, survey and archival strategy employed in most of researcher's methodology, either regression analysis and cross-sectional approach. In addition, the tools of analysis to demonstrate the understanding of the key context sustainable

practice in local building context, the seminal works which relevant to this research approaches are utilise a framework (14 %), literature review (13%) and creating a model (11%). Based on the facts that private companies predominant in Indonesian construction business (LPJK 2013, Pamulu 2010). Some project's information, such as financial data, minute of meetings, and bussiness proposal is not easy to obtained. However, some public domains provide these related information regarding general performance, such as contractors portfolio for procurement process. Moreover, the specific reports are provided by official parties. For example, procurement unit of local/central government. It means that impossible to undertake archival research through that kind of documents.

Therefore this attemps to follow the use of case study in management research. The multi-case studies to gain a better understanding of various phenomenon sustainable practices in Indonesian public building project, where the level of local authority become a unit of analysis. Regarding the criteria of research question type (Yin 2009), this research tends to employ the project document survey which also integrated in multi-case studies.

5.2.3 Sampling Method

Sampling method refers to the selection strategy of research participants or cases. In a quantitative method, sampling activities is used to generalise the phenomena of population of data, whereas in the qualitative research, it is to understand a particular case inquiry suggested in undertaking a purposeful sampling (Patton 2002, Maxwell 1996). According to Lincoln and Guba (1985:1999), a purposeful sampling serves "contextual factor" for deep understanding in the central issue among the massive information. Patton (2002) argued that purposeful sampling enacted as the basis of judgement of the research rationale, which included the utility and credibility issues from the small sampling. The credibility issues are discussed in Section 5.2.3.

Paton (2002:243) suggested fifteen strategies of purposeful sampling in order to select information-rich on the selected cases that depend on the research purposes and available resources. The strategies are introduced briefly in the next paragraph, while 15 strategies are applied simultaneously in the research context of public building projects

at different levels of local authority. Six strategies suitable for this research purposes are explained in Section 5.3.3.2.

5.3 Data Collection Method

5.3.1 An Overview

There are six major sources of evidence in case studies research: documentation, interviews, direct observation, archival records, participant-observations, and physical artefacts (Yin, 2009). In order to understand the actual activities during the project life cycle, this research relied on three primary sources of evidence, namely documentation, interviews and some field observations. The semi-structured interview was accompanied with the topic questions. The field observation also substituted the triangulation and cross-case process. All evident obtained from the three case studies location was discussed for analysis of the case studies. The data collection was conducted in the stage 2 of the research stage, as can be seen in Figure 5.3.

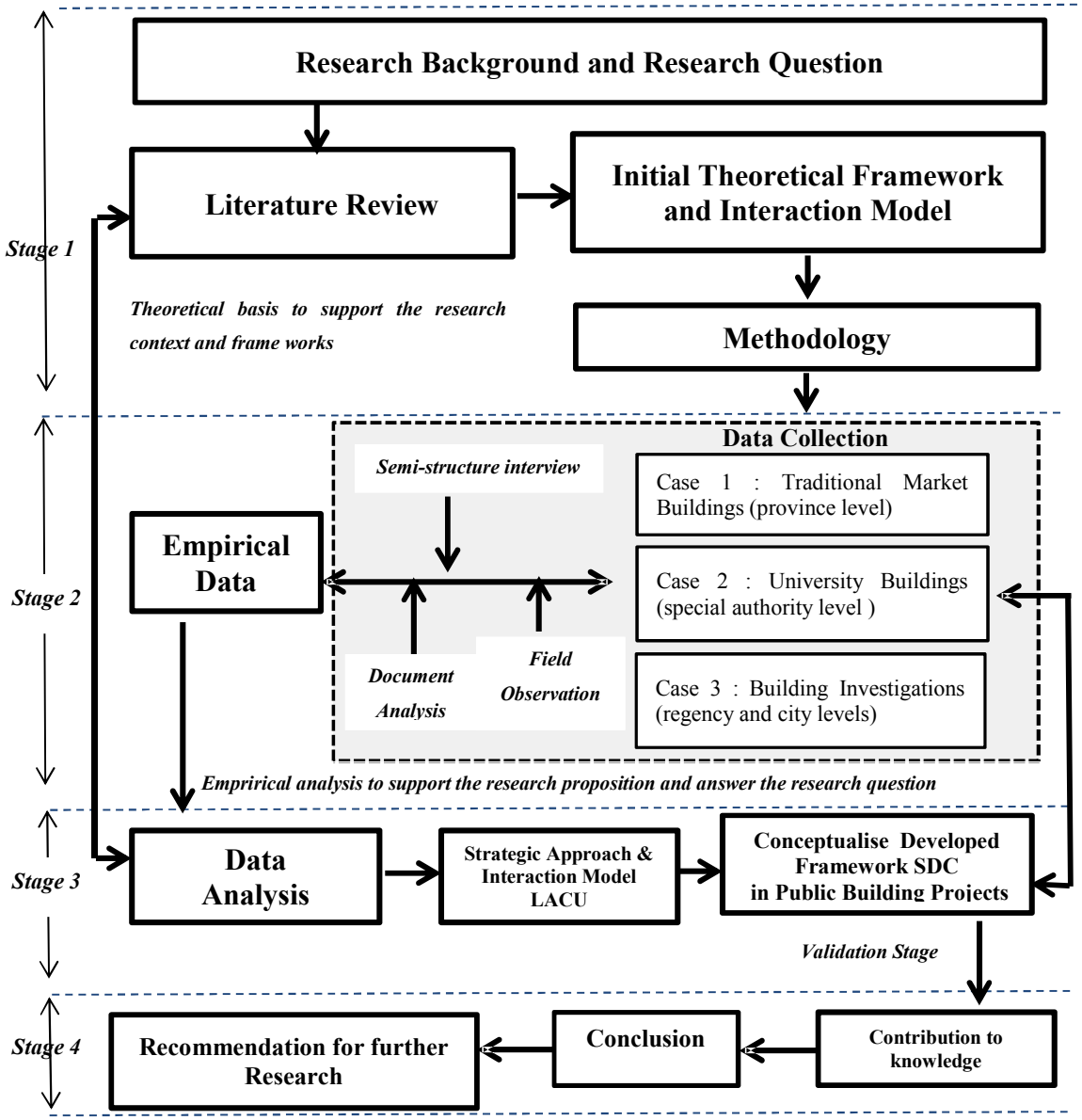


Figure 5.3. Research Stage 2: Data Collection

5.3.2 Design of Interview Study

There were two objectives of the interview study, first, to know the experience of public building practitioners at different levels of local authority and to explore the strategic approach by the application of framework of dynamic capabilities that has been discussed in Chapter 4. Secondly, this is to achieve understanding of sustainable practices during public building project's lifecycle by three different actors: local authority, contractors, and end-users.

Semi-structured interviews were conducted with twenty-four respondents from public building practitioners and building user. The interviews were conducted within 30 to 60 minutes. The questions were prepared based on three respondent types (see the detail of Interview Topic Plan in Appendix 5-2). The schedule of interviews was designed to explore the individual perspective of how the public building projects have remained competitive in the low cost project and which strategic approach can enhance project success. The respondents have various job role and range of experience between 10-25 years. These respondents were also enacted as key stakeholders, whether as Local Authority, Contractor or End-users. The detailed profile of respondents is presented in Table 5.3.

Table 5.2. Profile of respondents

No	Respondent Code	Job role of practitioners	Experience range in engineering field (years)	Role as Stakeholder (LA-C-U)
1	TM01	Contractor, Project manager	10-15	C
2	TM02	Contractor, Site engineer	10-15	C
3	TM03	Contractor, Operational manager	10-15	C
4	TM05	Subcontractor of structure	10-15	C
5	TM06	Building end-users (Market Trader)	-	U
6	UB01	Procurement unit	15-20	LA
7	UB02	Procurement unit	More than 25	LA
8	UB03	Building end-users (head of department)	-	U
9	UB04	Local authority (dean)	15-20	LA
10	UB05	Technical team (civil engineer)	15-20	LA

No	Respondent Code	Job role of practitioners	Experience range in engineering field (years)	Role as Stakeholder (LA-C-U)
11	UB06	Local authority (former dean)	More than 25	LA
12	UB07	Technical team (civil engineer)	15-20	LA
13	UB08	Building end-users (head of department)	-	U
14	BI01	Building Investigator (structure engineer)	More than 25	LA
15	BI02	Building Investigator (project management)	15-20	LA
16	BI03	Building Investigator (structure engineer)	15-20	LA
17	BI04	Building Investigator (architect)	More than 25	LA
18	BI05	Building Investigator (project manager)	15-20	LA
19	BI06	Building Investigator (geotechnic, project manager)	More than 25	LA
20	BI07	Geotechnical engineer	10-15	LA
21	BI08	Building Investigator (architect)	20-25	LA
22	BI09	General contractor	20-25	C
23	BI10	Structural engineer	More than 25	LA
24	BI11	Architect, construction service development board	More than 25	LA

Notes: LA = Local Authority, C = Contractor, U = End-users

All interviews were transcribed in full (see the example transcript in Appendix 6-1) and coded in thematic based using ATLAS.ti7-Qualitative software to assist the analysis

process. The dynamic capabilities aspects (managerial and organisational process, asset position and path dependencies) were utilised as a thematic template. The template applied through the cases had been captured in interviews transcript and archival survey.

5.3.3 Design of Case Study

5.3.3.1 An Overview

Based upon the discussion of research strategy at Section 5.2.2., case study was chosen as an appropriate strategy for this research. Case study defined by Yin (2009) is a strategy to investigate meaningful characteristics of an event or case based on the multiple sources from social reality. Case study as a qualitative research strategy focuses on developing in depth analysis of a single case or multiple cases (Creswell 1998). In addition, Yin (2009) stated that social researchers still believe that case study is suitable for exploratory phase of investigation. In other words, in the context of naturalistic inquiry, the case study method attempts to examine the strategic approach of public building practices from the empirical evidence of public building projects which are conducted by different levels of local authority based on the resources based view through the theoretical lens of dynamic capabilities. Also, it provides a novel empirically-based guidance for the local authorities to undertake sustainable public building procurement throughout project life cycle.

A comprehensive method for empirical work of such case studies is manifested through "a logical plan" as a research design (Yang 2009:26). Yang (2009) suggested five components to conduct a case study design:

- *Research questions*

  Case study choice depends on the large part of research question, "how" and "why" from the social phenomena. In this respect, this research attempted to get answers of the research question.

- *Research propositions*

  Considering the examination of the scope of research, four study propositions are identified as follows:

  – Public building practitioners' perceptions of sustainable practices in public

building projects can be understood in depth through the concept of sustainable dynamic capabilities framework.

- Intensity of interaction between key stakeholders (local authority, contractors and building end-users) of public building management influences the project success.
- The stakeholders' capabilities to enhance sustainable practices in public building project has a distinctive characteristic, depending on the levels of local authority.
- Balanced mechanism of sustainable-dynamic capabilities among different levels of local authorities provides a strategic approach in governing public building management.

- *Unit of analysis*

  This component is related to the "case" being studied. Unit of analysis is accurately defined by the research question focusing on one specific aspect (Yin 2009). Unit of analysis was utilised to understand the case study. Therefore, based upon the research question, this research chooses the case study as the unit of analysis. That unit of analysis also reflected the levels of local authority (provincial level, special authority level, regency and city level).

- *Logical linkage between data and the research proposition*

  The fourth aspect of case study logic is linking the data to the proposition. It concerns the analysis of activities, such as examining, tabulating or categorising the data and conducting the discussion through the study propositions. The data collection was conducted based on the unit of analysis and was interpreted by the application of conceptual frameworks of dynamic capabilities and interaction model of LACU (Local Authority, Contractor and End-users):

  - Practitioners' perceptions of sustainable practices in public building projects refer to the pattern of strategic approach for enhancing sustainable practices at different levels of local authorities. The pattern of strategic approach could be interpreted by the degree of interaction in the activities during the project

life cycle.

- The application of conceptual framework through the interview studies is reflected on the component of dynamic capabilities from organisational context (managerial and organisation process, asset position, and path dependency).
- In the process of developing Framework of Sustainable-Dynamic Capabilities (FSDC), the degree of interaction can be interpreted by a model of LACU which demonstrates the sustainable practices by major tasks during the project life cycle. The interpretation of sustainable practice is established by interviews with twenty-four respondents who were involved in the public building projects from different levels of local authorities.
- The probability of interactions also provides the pattern of sustainable practice at different levels of local authority.

- Criteria for interpreting the findings

  This aspect is related to the criteria of research validity. Based upon the naturalistic inquiry, the evaluative criteria have been discussed in Section 5.2.4. and established trustworthiness.

5.3.3.2 Multiple Case Study Design

a. Selection of case study

The case study projects were selected based upon the sampling method as discussed in Sub Section 5.2.3. Six strategies for case selection were considered together with different sampling methods:

- *Extreme sampling:* This strategy was conducted with the focus on extreme phenomena or unusual performance in local public building projects, to know how the successful cases are delivered and the level of authority where the project is located. Unusual performance draws from mechanism of operational or perspective of project organisational management. This research took the extreme sampling from successful and failed case. The success cases were taken from KGM project (case 1), SKW project (case 2) and various buildings at building investigation project, such as bank office, public hospitals, and some

public schools (case 3). The failed projects were taken from KD project (case 1), GKU project (case 2) and 5 selected case of building from investigation projects (case study 3).

- *Intensity sampling:* The selection of cases tended to focus on the project tasks during the project life cycle phases. This strategy was applied to select the case study which is representative for the level of local authority and to select the practitioner as a participant who has a particular role and capabilities in terms of managerial and organisational process, positioning assets and path dependencies, particularly in the case of public building projects. Intensity sampling was conducted to key respondents in specific cases:
  - From the Case study 1, it was taken sampling through discussion with project managers of KGM project who has all information and aspects of the project.
  - From the Case study 2, it was taken sampling through discussion with former of tendering chair committee of two cases, GKU and SKW project rather than chair of procurement unit.
  - From the Case study 3, it was taken sampling through discussion with the leader of building investigators and 34 investigation reports.
- *Maximum variation sampling:* This strategy aims to identify the central themes from common pattern of the public building project. The maximum variation sampling was also used to select the diverse range of cases of building type and various strategic approaches by key stakeholders in public building projects.
- *Critical case sampling:* This sampling was implied in specific information or representatively important, although not permitted for generalisation of all cases. This strategy focused on the practitioners with the specific approach for enhancing project success in particular cases of public building projects.
- *Snowball or chain sampling:* This is to identify case study and key person regarding which cases are information-rich. The key informant and resources from particular event of each case study took an important role to extend the scope of study. This sampling strategy is also recommended for gaining the access to a particular case study. This study had three informants; for Case 1, the

informant was taken from project manager of the contractor firms who has mastered the detailed process of project from initiatives to decommissioning; for Case 2, the informant was taken from former procurement committee that has national qualification in construction management and has been frequently involved in University Building project since 1990. Finally, the informant for Case Study 3 was taken from the coordinator of public building investigation team who provides all accesses on the valuable database in this research.

- *Convenience sampling:* Considering the limited time, cost and other resources, this strategy is suggested as the last alternative after another strategy has been taken into account.

According to preceding discussion about six purposeful samplings, there are three case studies which have been selected, as can be seen in Table 5.4. Each case represents different levels of local authority, type of buildings, and stakeholders in public building management in Indonesian local authority. Therefore, the analysis of strategic approach through selected case studies was able to achieve the replication logic for multiple cases, whether by cross-cases or triangulation. In other words, this research confirmed that multiple case study could demonstrate convergent of evidence, whether contrasting outcome or application of the developed framework with similar cases of public building practices.

b. Data Collection

There were four research data sources that have been collected: documentation, semi-structure interview, archival records, and direct observations.

– **Documentation**

The documents resulted during the project life cycle and observation among three case studies can be classified into four types:

- Administrative document: Minute of meeting, progress report of the projects
- Technical Document: Drawings, Photo of project activities, master plan, design note, report of quality control of material

- Regulation document: Building permit, local authority policy, other building regulations
- Public Document: News and editorial documentary, Litigation note or disputes report

All documents above were used to corroborate the information from semi-structured interview (Yin 2009). The information from the documentation is enacted as unobtrusive information, which has many functions: corrective function from interview information, corroborating evidence between statement of interviews and reality of cases, and generating questions for further investigation in particular problems. The details of documents collected in this case study research are presented in Table 5.4.

– **Semi-structured Interviews**

The interviews with participants aim to collect the detailed information from key stakeholders in public building project at different levels of local authority. There are three kinds of respondents in this research: Local authority, Contractor and Building End-users. The local authority includes the engineers and consulting enterprises (respondent type 1). The contractors specified for construction firms (respondent type 2), and building end-users are defined as independent party or those who receive the benefit of the end product of particular public building project (respondent type 3). The necessary documentation of each case study was also conducted during the interview process. The topic question (see Appendix 5-2) guided the semi structured interview to cover the main research questions.

– **Archival records**

The research used some archival records, such as: Procurement document (2 projects of university building cases), Investigation Report (34 cases of public building investigation in Central Java), Correspondences files (i.e. official letters among stakeholders in Case Study 1), and Statistic of constructions and audit report of national budgeting.

– **Direct-Observation**

To engage with natural setting in the research analysis, some data were also collected through direct observation. Direct observation was conducted in the

location of the study, such as traditional market building in KGM project (Case Study 1) and two university buildings in Semarang (Case Study 2). Case Study 3 was supported with secondary photo documentation from building investigators. However, due to the ethical considerations, especially for the cases involved in dispute and law enforcement, the photo documentations could not be presented in the analysis of case study report.

Table 5.3. Detail of Data Collection Method

Case Study-Code (Level of authority)	Total project, Respondent and location observed	Type of data	Data Collected
Revitalisation Traditional Market Building-TM (Provincial)	1 project	Document	• Design drawing • As-Built drawing • Photos of project activities Procurement document • Minute of Meeting • Progress report (not completed, see ethical consideration for detail reasons) • Local Government Policy in Building Projects
	5 interviewee	Interview	Voice tape and full transcripts
	1 location project	Direct-observation	Current condition of building, include field notes
University Building Project-UB (Special authority)	2 projects	Document	• Design drawing • Photos of project activities • Procurement document • Minute of Meeting • Progress report. • Building Master plan • Court decisions in disputes case
	8 interviewee	Interview	Voice tape and full transcripts
	2 location project	Direct-observation	Current condition of building, include field notes
Building Investigations-BI (Regency/City)	34 projects	Document	• Investigation report (include photo of project activities) • Buildings regulation (1996-2013) • News documentary (1996-2013) • Litigation notes/disputes resolution report.
	11 interviewee	Interview	Voice tape and full transcripts
		Direct-observation	Secondary photo documentations
Total: 3 cases	37 projects 24 interviewee		24 Voice tape and full transcripts + 2 triangulation interview, not trancribed

5.3.4 Pilot Study

Pilot study was conducted to gain understanding on the current situation and condition regarding case studies. The pilot study has been explain in Chapter 2. The findings from pilot study has demonstrated the current condition of sustaibaility implementation in Indonesian local public building projects. These result of study encourages the competitiveness of public building projects. The result of pilot study and the development study have been reported in chapter 2 also demonstrated statistical analysis of practitioners' perception study output as presented in Appendix 2-1. However, the quantitative approached fail to explain the root of unsustainable factors in public building practices.

In the pilot study, the responses were analysed to explore practitioners' understanding toward sustainability implementation. The overall result in the first stage of pilot study demonstrated less than unsatisfactory level of understanding among respondent. Most of respondent frequently implemented sustainable principles but did not realised which activities considered as sustainable practices. The result of first stage survey was complemented by in-depth interviews.

5.3.5 Ethical Consideration

During the process of data collection, documents obtained from the case studies can lead to a situation that needs ethical consideration, for instance, in cases under law enforcement or conflict of interest among the stakeholders in a particular stage of the building projects. In case study 1, one document potentially generated conflict of interest among stakeholders (local authorities, contractors and building control or supervision team). The document concerned roof accident in the middle of erection process of construction. Nevertheless, the accident has been resolved by replacing new schaffolding at the project site. Meanwhile, in case study two, the dispute resolution through the contractor led to law enforcement. Some original documents were inaccessible to collect because of administration mismanagement. Therefore, some missing link of evidence should be replaced by other information sources, such as

confirmation from interviews and a cross-case throughout public domain accesses (i.e. decision letter of the high court / *Surat Keputusan Pengadilan Tinggi*). Similarly, in case study three, some important documents, such as monitoring progress books and tests of material quality were inaccessible due to irresponsible stakeholders who destroyed that evidence, mostly contractors who committed fraud. This ethical consideration has significance impact to the corroborating process and triangulation method among cases. To avoid the bias off evidents, semi-structured interview can fill the gaps between facts or phenomenon of the public building projects and available data or supporting evident from respondents and case studies' document.

5.3.6 Trustworthiness of Case Study

Trustworthiness in qualitative research is a fundamental issue for inquirer to persuade the readers that the findings are "worth paying attention"; in other words, they are persuasive and believable for the audience (Lincoln and Guba 1985:290). In regard to addressing the research inquiry, Lincoln and Guba (1985:290) suggested four questions:

- "Truth value": How can one establish confidence in the 'truth' of the findings of a particular inquiry for the subjects and the context in which the inquiry was carried out?
- "Applicability": How can one determine the extent to which the findings of a particular inquiry have applicability in other contexts or with other subjects?
- "Consistency": How can one determine whether the findings of an inquiry would be repeated if the inquiry were replicated with the same subjects in the same context?
- "Neutrality": How can one establish the degree to which the findings of an inquiry are determined by the subjects and conditions of the inquiry and not by the biases, motivations, interests, or perspectives of the inquirer?

In light of naturalistic inquiry, from the basis, qualitative or quantitative research has different concepts and approaches in establishing trustworthiness (Lee 1999). Some evaluation criteria in quantitative research are unsuitable for qualitative research. Some strategies suggested are to enhance trustworthiness, but most of the influential strategies in establishing trustworthiness are taken from education research (Lincoln and Guba

1985 and Maxwell 1996). Lincoln and Guba (1985:328) suggested four validity criteria: “credibility”, “transferability”, “dependability”, and “confirmability”. In addition, these four criteria are able to be faithful reflection on the philosophical assumption. Moreover, Maxwell (1996) proposed three of validity criteria to understand the description, interpretation and theory being involved in the qualitative research.

Based upon the validity criteria, Lincoln and Guba (1985) and Maxwell (1996) also suggested the technical strategies to meet these criteria for establishing trustworthiness as can be seen in Table 5.2.

Table 5.4. Technical Strategies for Establishing Trustworthiness

(adopted from Lincoln and Guba 1985)

Notes:

- *Triangulation:* a process to enhance credibility by related evidence from different sources of data, methods and investigation. However, it is the combination between archival survey and interview study or the combination of different research methodology (Case study and phenomenology). For this study, the triangulation was undertaken through some activities:

- Triangulation by interviews and email communication with other experts (excluding the 24 respondents).
    - State auditor to confirm about criteria of sustainability in public budgeting at building projects (evidence: voice tape recorded)
    - Health and Safety expert to confirm about current practice in project health and safety orientation (evidence: voice tape recorded)
    - Academician in Construction Management (evidence: email communication)
    - Key interviewees (evidence: email communication and voice tape recorded)
- Triangulation by comparing data or regulation:
    - Comparing interviews with regulation of public building regulation (National or local level: Province, regency or city levels)
    - Comparing interviews with news from reputable media (TV media, national newspaper, local newspaper, official website)

For the sample evident of triangulation, see Appendix 8-1.

- Peer debriefing: Objectivity issues can be obtained by independent feedback from external and neutral party. In this research, peer debriefing was established from key respondents' feedback and suggestion from academic colleagues with relevant background. Peer debriefing was undertaken by email communication and video calls by Skype. (See the evident at Appendix 8-1)
- *Negative case analysis:* this strategy is important for rigorous examination from supporting data. It might be close to a process in refining the hypothetical works, whether modified or excluded in conclusion of the study. Pragmatically, the sufficient empirical cases should be considered in this respect. Negative case analysis reviewed this research from the unsuccessful project cases.
    - Case study 1, the unsuccessful project case was taken from KD market project (anonym) and previous revitalisation traditional market project which was conducted by other contractors.
    - Case study 2, the unsuccessful project case was taken from GKU project

(anonym) which was conducted by contractors TDK (anonym)

- Case study 3, the public building investigation would identify unsuccessful project case from building failures and defect at regency and city level. It means the investigation cases become a negative case analysis in this research.

- *Referential adequacy:* regarding the credibility aspect from record material. This research will provide the relevant information during the research into appendices as CD ROM version.
- *Thick description:* The transferability issues relates to the descriptions and interpretation from the rich database for possibility judgement by research applicant or reader. The description of the research findings could be understandable by the reader. For instance, in interview studies, the evidence will utilize full transcript as transferability interpretation. In addition, the theoretical framework is also helpful with regard to the replication case to other settings. The thick description is described in Section 5.4.3.
- *Audit trail:* This technique aims to audit the full record of the study in continuous activities. There are three information categories:
  - Raw data: voice recorded from interviews, interview transcripts (original language and English version), scanned copy of project documents being studied, regulation of public building at Indonesia, consent form, news and statistic data from reputable organisations.
  - Research journey: field notes and some evident of activities (i.e. bus ticket)
  - Processing stage of the data: tabulation data, schematic diagram or casual diagrams, graphs of data and information, coding of interview transcripts

  Some simple tasks of these activities also could be assisted by computer qualitative analysis tools (i.e. This research used ATLAS.ti 7), which are considered necessary for systematic procedures, transparency, and rigorous approach. Table of Audit trail can be seen in Appendix 5-1.

5.4 Data Analysis Method

5.4.1 Case Study Analysis Method

The case study analysis could be conducted throughout tabulation, examination, categorisation and mix of the evidence to address the study propositions (Yin 2009). In this regard, the propositions recognised in Subsection 5.3.3 accordingly, serve as the general strategy for directing the examination of the case study. According to Yin (2009), there are five analytical techniques which should be considered as alternatives in case study: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis. This research adopted the first of the three techniques due to the nature of the public building project at different levels of local authority. Mostly, each building project is unique, sequential-event based on the time schedule and contextual due to the local problems, whether in terms of supply chain of materials, skills, and environmental condition. Even the project is similar in terms of type or dimension, the execution and materials quality is probably various by the time. As long as the project execution relies on the labour forces or human involvement, public building case has distinctive characteristics by the pattern of activities, local context, and time consideration.

5.4.1.1 Pattern Matching

This technique tends to analyse the empirical pattern acquired by case study which is developed by the proposition of study. In the event that the examples concur, the outcomes can help the contextual analysis to reinforce its validity. In this regard, various expected patterns collected from the study recommendations can be identified in the following:

- **Proposition 1:**
  Public building practitioners' perceptions of sustainable practices in public building projects can be understood in-depth by employing the concept of sustainable dynamic capabilities framework.
- **Proposition 2:**
  Intensity of interaction between key stakeholders (local authority, contractors and end-users of public building) of public building management influences

project success.

- **Proposition 3:**
  The mechanism of stakeholders' capabilities to enhance sustainable practices in public building project has a distinctive characteristic based on the different levels of local authority.
- **Proposition 4:**
  Balanced mechanism of sustainable-dynamic capabilities among different levels of local authorities emerges as a strategic approach in governing public building management.

5.4.1.2 Explanation Building

Explanation building is the iterative process to build an explanation about what happened in the case study. This technique refers to serial examination through case study. In case the objective of explanation cannot be built by the case study, we can refer to the rival explanations. In the multiple-case studies of 37 public building projects (1 in Jakarta, 2 in Semarang and 34 buildings in separate regencies or cities in Central Java Province), this analytical technique was applied to the cross-case analysis. It was essentially used to clarify why certain cases produce comparative results, while different cases have distinctive results. Accordingly, the initial proposition study suggestions could be changed and refined.

5.4.1.3 Time-Series Analysis

This technique is similar to the time-arrangement investigation directed in examinations or experiment and quasi-experiments. However, regarding time series in case study, it attempts to the investigation of a pattern of information over time, tentatively or reflectively, concerning a grouping or time. The investigation of these three case studies was based upon the chronological approach that spotlights on the ordered examination of a progression of occasions happening for the situation under study. This research was presented by time sequence of critical events from the initiative project, execution and decommissioning, and presented based on the date

and activities on document analysis and supported with information, which was collected from public interviews with building practitioners.

5.4.2 Interview Analysis Method

5.4.2.1 Template Analysis

To recognize the interview data analysis, Miller and Crabtree (1992) suggested four techniques which can be approached, that is, Quasi-statistical, editing, immersion and template.

- Quasi-statistical attempts to quantify the textual data into statistical analysis. In this regard, the features are concerned on generalisation and hypothesis testing rather than on answering the qualitative questions (King, 1994).
- Editing approach tends to interpret a text from meaningful part. This technique is suitable for developing theory (grounded theory analysis).
- Immersion is an immersive process between researchers and subjects being studied. This approach provides a reflective analysis during the process at every level of observation. Moreover, the immersion strategy is developed from naturalistic inquiry (i.e. by reading non-academic literature, observation, and reflection)
- Template is widely used in qualitative research through "thematic coding" which is derived from the research question, in common used the term of "template analysis" (King 1998:118). Template analysis tends to identify the textual data throughout a list of codes or templates for gaining an interpretation in particular issues (King 1998).

The interview analysis of this research was well suited to conducting template analysis. Two templates were prepared for interview analysis study. First template engaged the key stakeholders to synthesise the interaction model of LACU. Second, the template was derived from framework. In addition, template analysis which was derived from the framework was utilised widely, particularly by the national social scientist in the UK (Bryman 2008). In contrast with King (1998) where the template analysis was developed from two templates of "initial and final", this research adopted framework of dynamic capability as the final template. The framework of

dynamic capability is described as a "matrix based method" in order to synthesise the interview transcript of the cases (Ritchie *et al.* 2003). Two templates have been prepared for the interview analysis listed below:

Template one: Sustainable practices in Public Building from different actors

- Theme one: Local Authority (LA)
- Theme two: Contractor (C)
- Theme three: End-users (U)
- Theme four: LACU (Local Authority-Contractor-End-users)

Template two: Application of Dynamic Capabilities Framework

- Theme five: managerial and organisational process, which consists of: Coordination/ Integration; Learning and Reconfiguration/ transformation
- Theme six: asset position, which consists of: technological assets, complementary assets, financial assets, reputational assets, structural assets, and market assets
- Theme seven: path dependencies, which consist of: previous investment and business developments, and established routines

5.4.2.2 Qualitative Software Analysis – ATLAS.ti

ATLAS.ti is a qualitative analysis that offers tools for exploring the complex phenomena of the data which majority bodies are in the form of text or audio-visual materials. These tools have a principle of analysis through the philosophical approach by the Visualisation, Integration, Serendipity and Exploration (VISE). That principle offers an outstanding and "intuitive environment that keeps you focus on the data materials". Visualisation uses the relations between the object during the process of eliciting the meaning behind the data and structuring unstructured data throughout a systematic approach. In terms of fundamental aspect to integrate all the sources material of analysis, ATLAS.ti utilises the store entities namely "Hermeneutic Unit (HU)". The HU will keep hundreds of data or files in a single unit of project analysis. The serendipity refers to the intuitive approach to the data, particularly in the browsing of the information and engages with the data, which "were not exactly what originally we

had in mind" (Friese 2013:10). The principle of exploration closely relates to Hermeneutic Unit as a discovery oriented approach.

ATLAS.ti conceptualises sources in the powerful workbench within the Hermeneutic Unit (HU) by primary documents, quotations, codes, and memos. The software is complemented by aspects of data analysis tools and visual linkage (networking or families) in the operational. The HU could be a container by the research topic in the digital domain, such as primary document, the quotation, the code, the memo, and all the conceptual linkages.

Note: Screenshot analysis interview of Case Study 1.

Figure 5.4. ATLAS.ti Qualitative Software Code and Document Feature (Friese 2013)

However, this research utilised ATLAS.ti to analyse the qualitative data, in terms of coding by the template analysis of interviews (see Section 5.4.2.1). Nevertheless, manual coding of interviews was conducted earlier to simplify the process of qualitative analysis. The analysis provides three Hermeneutic Units (HUs) by the case study. Each HU consists of thematic coding based on template analysis, free coding especially for important evident in corroborating the developed frameworks, i.e. photo documentation and specific project documents.

5.4.3 Case Study Report

5.4.3.1 Structure of Case Study

Based upon the research strategy in Sub Section 5.2, this research is more appropriate as multiple case studies. The case study purposes as an explanatory study of strategic approaches for enhancing sustainable practices in public building projects in local authority. Therefore, regarding the method of composition report (Yin 2009: 176), this research employed four types of structure: linear-analytic, comparative, chronological and theory-building (see Table 5.5.)

Table 5.5. Type of structure of Case Study Report Based on the Different Purposes

Note:

- Linear-analytic structure is a standard approach from problematics, literature review, method of analysis, data collection, analysis, and conclusion.
- Comparative structure is a comparative structure that repeats the main case studies by comparing alternative description.
- Chronological structure is developed by the event or evident over time.
- Theory-building is a sequential approach which is followed with specific topic and reveales new part of theoretical arguments which have been made.

5.4.3.2 Thick Description

In regard to satisfy the transferability of research' trustworthiness, "a thick description" was utilised for case study analysis. The format of the thick description was presented in the same way through all case studies. The three key sections were used as a guideline for individual case study report:

Section 1: Project Introduction

Section 2: Chronology of Projects

A. Programme Overview
B. Profile and Case Context
C. Case Description
D. Results

Section 3: Summary of Case Study

5.5 Summary

This chapter has presented three aspects of the methodology adopted in the researcher, namely (i) research strategy; (ii) data collection method, and (iii) data analysis. Based upon the nature of reality, this research was categorised as interpretive research. To understand the social reality of public building management, this research employs the qualitative research using multiple case study as a research strategy.

The research data were collected from four sources: project documentation, semi-structure interview, archival records, and direct observations. The project documents consist of administrative documents, technical documents, regulation documents, and public documents. In order to collect detailed information of public building management, this research undertook semi-structured interviews witho 24 participants who represent the key stakeholders (local authority, contractors, and end-users). The necessary documentation of each case study is also collected during the interview process. In regard to the corroborating evidence, this research uses archival record from procurement activities, building investigation report, correspondence file and statistic data of local construction industry and auditor report from national budgetary. Direct observation was conducted in the location of the study to engage with natural setting in

the research analysis.

Regarding the case study analysis, this research comprises two methods: template analysis and thematic coding from interview transcripts and field evidence (i.e. project document and notes of observation). There are two templates used in the case study analysis. The templates are adapted from the initial framework of dynamic capabilities and based upon the key stakeholders in public building management. In order to satisfy the transferability of research's trustworthiness, the case study report is presented as an explanatory study through thick description approach.

CHAPTER 6 Results and Analysis of Interviews

6.1 Introduction

This chapter aims to describe the results and analysis of interviews with public building practitioners at different levels of local authority. The analysis of the interviews is part of empirical studies from three case studies, which have been explained in Chapter 5. There are two objectives of the interview study. Firstly, it is aimed to gain the opinion of public building stakeholders at different levels of local authority based on their experience. Secondly, it is aimed to obtain understanding of sustainable practices by three different actors: local authority, contractors and end-users during public building project's lifecycle. The analysis investigates three specific questions:

- First: What are the strategic approaches adopted by practitioners to enhance sustainability, as viewed from dynamic capabilities perspective?
- Second: What are the factors that determine the success of public building projects?
- Three: How do the local authorities approach different levels of authority to enhance sustainability for public building management?

Based on the three case studies, twenty-four semi-structured interviews (see the example full transcript in Appendix 6-1), with public building practitioners have been conducted and analysed. The chapter begins by describing the development of the template analysis from the initial frameworks and topic questions with the aid of ATLAS.ti computer software. The results of the analysis will be discussed in two sections of the template according to seven key themes identified from template analysis:

Table 6. 1. Template of Analysis

Template	Theme	Content of theme
Sustainable practices in Public Building from different actors	Theme one: A. Local Authority (LA)	(A.1.1) Sustainable practices in public building project by local authority
	Theme two: B. Contractor (C)	(B.2.1) Sustainable practices in public building project by contractors
	Theme three: C. End-users (U)	(C.3.1.) Sustainable practices in public building by end-users of buildings
	Theme four: D. LACU (Local Authority-Contractor-End-users)	(D.4.1.) Sustainable practices in public building project by local authority, contractors and end-users
Application of Dynamic Capabilities Framework	Theme five: A. Managerial and Organisational Process	(A.5.1.) Coordination/Integration (A.5.2.) Learning (A.5.3.) Reconfiguration/ transformation
	Theme six: B. Asset Positions	(B.6.1.) Technological assets (B.6.2.) Complementary assets (B.6.3.) Financial assets (B.6.4.) Reputational assets (B.6.5.) Structural assets (B.6.6) Market assets
	Theme seven: C. Path Dependencies	(C.7.1.) Previous investment and business developments (C.7.2.) Established routines

6.2 Interpretation of Interviews

In order to interpret the interview data, template analysis, which was presented in Table 6.1. was used to guide the coding of the interview transcripts. The coding of interview (as derived from templates one and two) aims to produce an account that is used to justify the richness of the data. The template was utilised as a holistic framework for the interpretation of the interviews. There are two objectives to achieve

from the interview studies. First, the first four key themes of template one were used to explore the opinion of sustainable practices in Public Building from different actors (Local authority, Contractor and End-users) and levels of local authority (province, special authority and regency or city level). The other three themes in template two were used to apply the initial dynamic capabilities framework to demonstrate the strategic approach in public building projects at different levels of local authorities. Second, direct quotations from interview transcripts were extracted to illustrate the discussion about thematic codes to answer the research questions. The discussion from interview studies offers insight into the practitioners' strategic approach to enhance sustainable practices in public building project at different levels of local authorities.

6.2.1 Template 1: Sustainable practices in Public Building from different actors

A. Theme one: Local Authority (LA)

(A.1.1) Sustainable practices in public building by local authority

- The behaviour of local leader, who has no competencies in public building projects is often hampering the sustainable practices. For instance, collusion practices are often found in local procurement of public building projects. It is termed as "*Konco*" system (Friendship system).
- Experience of contractors to revitalise the traditional market buildings is important, but client expectation will challenge the practitioners to accommodate their favour in particular goals.
- The change of local leader influences the sustainability practice in public building project at local authority level. A new local leader often makes changes, in terms of function, or in few cases, does some significant changes to the previous design. Therefore, the local budgetary report is influenced by these changes, in terms of price mark-up (inefficient and not economical) and volume of the construction products.

For the detail of exemplary quotation, see Table 6.2.

Table 6. 2. Exemplary Quotations Template 1 Theme one

Exemplary quotations
Case 1: P 1: ATI_Case study 1_CODING.pdf - 1:209 (14:813-14:1089) "KGM project is the best, best in terms of building, and the administration is complete. PD Pasar Jaya also asked the same. It was not too good, probably because of the governor changes. So it needs administration, all of project data are available, again, it was here."
Case 2: P42: ATI_Case study 2_CODING 14 July.pdf - 42:17 (10:2023-10:3254) "However, the one who becomes a leader in each institution as well as in the region have different interests. He (the leader) is called "konco system", friendship system (refers to collusion); they make it there, in order to keep it safe for him. It does not mean to safe for the project nationally, but safe for the people, for the officials. Until now, all still like that. So, for example, there are people who are experts in civil buildings, experts of structure and (they have) long experienced, but he is not used (hired) because he does not close to its officials. … Almost all institutions do the same. … This problem is a challenge for Indonesia."
Case 3: P121: ATI_Case study 3_CODING.pdf - 121:26 (12:1961-12:2545) "Experience is certainly important, but back again to consultant or contractor, if I could say that follows the client desire. Their performance will be fine, if the client surely acts based on the planning that has been made. The consultant or contractor must obey the applicable work standard, but mostly they do not. Mostly contractor and consultant have already got experience to build a building with certain specification. However, in its implementation, they must follow what the client favour. Meanwhile the client has its own concerns and it often confuses for the suppliers"

B. Theme two: Contractor (C)

(B.2.1) Sustainable practices in public building by contractors

- To enter the public building industry in local authorities, confidences are needed in terms of sufficient capital investment, skills, expertise to deal with local character and uncertainty in such industry.
- The origin of the contractor's company is considered an influential factor for project success. Small and medium contractors in local authority often handle a project based upon the operational costs, such as transportation cost for management

meetings. Commonly, in good management, communication is effectively performed among parties within a nearby city. Most experienced contractors have headquarters. Hence, the project can set-up the management from a nearby city, at least from the branch office.

- Most of contractor selections in local industry have no appropriate assessment. Therefore, some contracting service providers have lack of skills and insufficient personnel. Moreover, some public building practitioners are also inadequate of experience in building environment and unqualified in a particular project scale.
- Regarding productivity of local public building, generally it could be indicated by the production of design drawings, quality control and quality assurance, and efficiency in terms of coordination and costs during the project execution. For instance, details of design and shop drawings contribute to the detail of executions and scrutiny easily. For the detail of exemplary quotation, see Table 6.3.

Table 6. 3. Exemplary Quotations Template 1 Theme Two

Exemplary quotations
Case 1: P 1: ATI_Case study 1_CODING.pdf - 1:170 (2:838-2:1045) "Based on our experience, we think it is easy, it would be easier for us to observe. When we offered this market project for an inexperienced one, they will be difficult to sort out, which market is good or bad"
Case 2: P42: ATI_Case study 2_CODING 14 July.pdf - 42:35 (24:2901-25:2112) "It happened in GKU building belongs to Engineering Faculty which is stalled. The first reason is, the leader or Project Manager (PM) does not have qualification nor had enough experience to hire or manage and complete this work. The second reason is, contractors are not proficient, that happens because contractors are from outside Central Java province. In facts, they are from East Java, so that they are "new people", new experiences, not proficient [on] the field. "
Case 3: P121: ATI_Case study 3_CODING.pdf - 121:93 (42:865-42:2177) ".....For comparison, the first project from the initial planning, the project was 18 months elongation with swelling of funds 5 billion dollars. In buildings with good drawings completeness, the project should be done within 20 months, it can be completed in 10 months; automatically the construction costs could be saved almost 5 billion."

C. Theme three: End-Users (U)

(C.3.1.) Sustainable practices in public building by end-users of buildings

- The role of end-users of public building is minor during the project life cycle.
- Sustainable practices by end-users of the public building could be manifested by proactive response or interaction, smart-behaviour and also density of market population which correspond to the proximity towards project performance. The initiative from end users can be a trigger for sustainable practices, especially by the activities that imply the improvement of energy efficiency and building maintenance strategies.
- Too many interventions of the building end-users or stakeholders in the middle of building execution hamper project success and provide the distraction or change the particular building functions. In some cases, most end-users in regency or city level are also enacted as the local authority.

  For the details of exemplary quotation, see Table 6.4.

Table 6. 4. Exemplary Quotations Template 1 Theme Three

Exemplary quotations
Case 1: P 1: ATI_Case study 1_CODING.pdf - 1:187 (6:868-6:1203) "The livelihood of the market depends on a lot of factors, such as the strategic position in the centre of the settlement, the market has a lot of customers, and the most important is the attitude of the merchant during socialisation. It would be Impossible, although the market is lively or has many buyers, but the merchant is uncooperative, it would be hard."
Case 2: P42: ATI_Case study 2_CODING 14 July.pdf - 42:27 (19:1278-19:2431) "If faculty has same commitment, means that bring the policy from bottom up, not just partials. Basically, it is same. So the technical is clear, because we are unite in one space. ….."
Case 3: P121: ATI_Case study 3_CODING.pdf - 121:65 (29:2346-29:2940) "There are too many user interventions in it. The users should communicate their needs in detail during the planning phase. Unfortunately, In Indonesia if there is a change in local leader, there is also a change in the policy." "For example, the public health unit in Muntilan, when there is a change in the officials, the new

Exemplary quotations
personnel does not know the vision and mission of his predecessor or its development roadmap. It affects the change in functions and quality of buildings. So, the success of a building project is determined by its organization system. Salatiga Hospital is an example"

D. Theme four: LACU (Local Authority-Contractor- end-User)

(D.4.1.) Sustainable practices in public building interactions by local authority, contractors and end-users

- Common problems in public building project are derived from over-expectation during the quality control activities. Most of the building controls are over the expectation in the construction works; meanwhile, the unit prices are below the government standard. In one hand, the design standard requires minimum quality, but in the other hand, many of the material specifications are over-qualified.
- Imbalance between the profit margin and standard quality of construction product will trigger the conflict of interest among public building stakeholders. In other words, the priority of building projects is often-inadequate in terms of resource supply.
- The local authority should be more independent in governing the public building project, whether as a regulator or as an operator.
- Misconducts caused by lack of knowledge in building construction environment. Mediocre awareness of decision makers in regard to the fundamental decisions toward building execution has proved that they are incompetent people. The power of local leader are more dominant rather than engineering adjustment.

  For the detail of exemplary quotation, see Table 6.5.

Table 6. 5. Exemplary Quotations Template 1 Theme Four

Exemplary quotations
Case 1: P 1: ATI_Case study 1_CODING.pdf - 1:226 (27:1732-27:2257) Codes: [C] [LA] [U] "Approximately one year, because it fits with the investor. It is hard to make the deal. Then, the investor willing to work with less guaranty because the local government feel sorry for the condition

Exemplary quotations
of the merchant. The project finally done as deal with PD Pasar Jaya with the last investor. The local government promised to investor of KGM project if the work is successful, so some market jobs will be given to them (contractor's company). This is their first step in associated with Pasar Jaya."
Case 2: P42: ATI_Case study 2_CODING 14 July.pdf - 42:43 (28:2257-28:2880) Codes: [C] [LA] "…….. There are often occurring friction between the technical team with the contractor because of the budget policy. ….." P42: ATI_Case study 2_CODING 14 July.pdf - 42:42 (28:1601-28:1950) Codes: [LA] [U] "Usually the leader's policies expect a project can be realized well. But, sometimes a lot of things as an obstacle. The first reason, if the allocation of funding has been limited, ……."
Case 3: P121: ATI_Case study 3_CODING.pdf - 121:54 (25:118-25:1265) Codes:[C] [LA] "…. Other problems may appear, the work is inadequate and the finishing is not sufficiently elegant. When contractor and planner hold out, it should not be an extra work, but the owner has been entertained, so the fund can be released. ….. We are in technical side, planner only knows during the auction. Planner's tasks should stop when the technical document finished. But in fact, they have to follow the construction process. Unbelievable, planner is supposed to finish when the document finished, but when there is such a dispute about the volume and BoQ (Bill of Quantity), planner is called although there is a supervising consultant in the project. This phenomenon occurs since the start of planning." P121: ATI_Case study 3_CODING.pdf - 121:24 (12:413-12:712) Codes: [LA] [U] "Based on local phenomenon, who has experience commonly is its design consultant. User and project manager generaly did not have knowledge about building construction. So, that might be there is tendency in mindset of the decision making. Apparently, the people who has competencies in construction."

6.2.2 Template 2: Application of Dynamic Capabilities Framework

A. Theme five: Managerial and Organisational Process

((A.5.1.) Coordination/Integration

Each local authority level adopts different approaches in order to coordinate the organisation of projects. At the province level (Case Study 1), it utilises the effective organisation with small members. The project organisation is constructed by a simple structure, consisting of 9 project staffs and two managers (project manager or managing director and operational manager). The coordination among staff and management is delivered by egalitarian style. Egalitarian means no hierarchical relationship among project organisation. Hence, there are no gaps between top management to the field engineers during the project executions. Project organisational staffs are enacted by specific tasks and have equal role to achieve the project goal and break down the goal into the time schedule and progress curve (S-Curve) on daily basis. The other two local authorities adopt the top down managerial approach; hence, the university project adopts the bureaucratic organisation. See Table 6.6 for several examples of important quotation.

Table 6. 6. Exemplary Quotations Template 2 Theme Five A.5.1.

Exemplary quotations
Case 1: "Honestly, as a provider of market building construction project, I think that we do not need a lot of personnel but effective organization."
Case 2: "The first problem is many weaknesses from organisation of the owner; starting from budget users, budget users' authority, official committing officer and auction/ tender committee. The weaknesses are because most of person in charge or from stakeholders. They are only merely served, competence in their field of competences are minimal, (whereas) it needs people who are competent in their field." "Government is not consequent to the budget system. Although the government has set the standard in the form of Decree of the Minister of Finance Sri Mulyani in 2005, but it was still used as reference until 2011. Based on these standards to the value of a particular project, a PPK (committing officers) received specific honoraria per annum. …., it is trimmed and which application is local rules… Unfortunately, it is never happened. Those are under 80% of the standard, ridiculously in all parts of Indonesia is as in such condition."

Exemplary quotations
Case 3: "First, although the rule has been good, to a work that was not published by electronic procurement (e-proc), tend to divide. Second, the project is mainly derived from parliamentary parties. People's House of Representative (DPR: Dewan Perwakilan Rakyat) who has a project, they ask the contractors to work on it. Whereas their ability is not qualified, but still forced to work on it. The one who gave the task, in this case is the government, mostly lost out there, consequently the project quality is below the standard" "The local government has two functions. First, as a local authority that is influenced by the electorates, as an executive who manage project budget should be able to accommodate interests that have a higher authority. As I mentioned at the beginning, if there are "surrogate" of those who have greater power than the executive so their duties are filling them. Second, administratively in the work, local government implements functions of control optimally refers to regulation of the project budget. Minimum requirement to execute the building project should be able to meet the target of budget absorption and focus on completion time."

(A.5.2.) Learning

In pursuing project success, a learning process is adapted from the local condition of the project. The strategies for case study one (province level), in terms of adapting the characters of end-users (in this case, market traders/ merchants) and their experience from previous revitalisation projects have been learnt to elevate the awareness of project failures. The contractors and stakeholders learned the strategies to engage with merchants' behaviour and decide the strategic location of the traditional market throughout some approaches for enhancing project success. The strategies are, for instance, conducting field research of potential market development (i.e. Study on customers (of the traditional market) preferences and merchant habits during the opening hours, formulating an affordable price of market stalls, identifying the traditional market competitors and street vendors in certain radius, and defining the market livelihood from field observation). For the other cases (Case Study 2 and 3), the strategies are typically learning from the site project characteristics (i.e. Contractors and consultants who have been involved in the procurement process) and developing a better procurement mechanism year to year (i.e. Holding internal training for authority

staffs, developing procurement document). For the detail of exemplary quotation, see Table 6.7.

Table 6. 7. Exemplary Quotations Template 2 Theme Five A.5.2.

Exemplary quotations
Case 1: "Do not ever build a market where there are street vendors in nearby of 2 kilometres, ….." "Market livelihood depends on a lot of factors, such as the strategic position in the centre of the settlement, the market has a lot of customers, and the most important is the attitude of the merchant when socializing. It would be Impossible, although the market is alive or has many buyers, but the merchant is uncooperative, it would be hard."
Case 2: "Contractor did not meet the minimum qualifications of experience we wanted. 6 storey building that we design have included Low rise building towards medium rise building. The category low rise is at least 5 floors or roughly as high as coconut trees on the average age based on some literature. … .." "That was the weakness that occurred in the early procurement, and it turned out that it was not set in the auction process. In every government institution has different symptoms. Hence, consistency of standards of competence must be adhered by people who are also very competent on procurement issues such as this."
Case 3: "The owner did not understand the procurement mechanism, the consultant did not give a good advice, and the technical department did not provide awareness clearly, then the project outcomes was not absorbing the budget successfully, and impacted on the local government legally. There might be certain deals between the project stakeholder was causing this situation. So, we pull out for further investigations because the problem was very complex."

(A.5.3.) Reconfiguration/ transformation

In achieving the project success and sustaining the business activities in a rapidly changing environment, a project organisation needs to reconfigure or transform the institution to adapt with the business system or political administrative impacts for a new value or benefits. Transforming process refers to adaptation or enhancement of a new identity to elevate the new advantages through managerial and organisation activities. Process of transformation needs strategic activities in order to reach project success. The transformation of managerial and organisation at the three case studies denotes the methods, which are employed by stakeholders.

In Case Study 1, in the contractor's perspective, the company has been transformed from a specialist contractor to become a general contractor. The reconfiguration of company management tends to encompass the increasing potential market of public building project, particularly in the revitalisation of traditional market buildings in Jakarta. The process of transformation is implemented through the management very quickly during four years (from 2005 to 2009). The outstanding performance of transformation process is supported by experienced manager in public building management and sufficient capital investment, including individual reputable engineers within project teamwork.

In contrary, the other case studies (case study two and three) have a different approach toward the transformation process. The nature of project institution among two cases as discussed at Section A.5.1.(coordination/integration) adopts the top down managerial approach. It means the innovation in managerial and organisation aspect is apparently difficult to achieve. However, the research found that a similar process of transformation in case study two delivers the changing habits of the building occupants (end-users) more significantly to reduce the energy or resources consumption (i.e. consumption of electricity and paper during the teaching-learning activities). The building's end-users could be taken as an exemplar to influence the local authority to reconfigure the management, in terms of policymaking and implementation of the rest of building project by the faculty building masterplan. Moreover, at the regency or city level, the transformation process is found through intervention of local leaders in the building project institution. The experienced and innovative local leader has a significant role to transform the sustainable practices in public building projects, for instance, a hospital project of regency level in Salatiga and many other buildings in Central Java province. For the detail of exemplary quotation, see Table 6.8.

Table 6. 8. Exemplary Quotations Template 2 Theme Five A.5.3.

Exemplary quotations
Case 1: "Mr. S already has experience in Pasar Jaya, and finally we take this KGM project. Internally, we formed a team and we already know people who will be involved in this project. Actually, we involved any experienced person for this project, like Mr. J, SE, US and SU who have an engineering background. We have Y and N to get in touch with merchants. Finally, we run the project, which, assisted by Mr. H, until now"
Case 2: UB03 S: The first most visible is the use of AC, because it uses one central in the middle..., Second we do not use a lot of paper. So as it is, the letters which came out we…. ……. S: It used to be a letter every time... Every activity makes the letter. Now we start to use the system, so it's about 50% ……. S: Changes in habit that result in efficiencies in all areas.
Case 3: BI08 radical changes in terms of local leader interventions N: …. There are too many users' interventions in it. The users should communicate their needs in detail during the planning phase. Unfortunately, In Indonesia if there is a change in local leader, there is also a change in the policy. For example, the public health unit in Muntilan, when there is a change in the officials, the new personnel do not know the vision and mission of his predecessor or its development roadmap. It affects the change in functions and building quality. So, the success of a building project is determined by its organisation system. Salatiga hospital is an example.

B. Theme six: Asset Positions

(B.6.1.) Technological assets

Technological assets play a significant role in public building projects. Technology is a product of innovations and it affects the efficiency, in terms of reducing time or cost of construction. Otherwise, stakeholders in local authority can utilise subcontracting projects with other parties or recruit specialists or experienced party to be involved in the project team. For the detail of exemplary quotation, see Table 6.9.

Table 6. 9. Exemplary Quotations Template 2 Theme Six B.6.1.

Exemplary quotations
Case 1: TM02 "It used to be straight down the drain, now we use STP, it is out of the channel so no longer smell." TM05 "More often, like small building is hard to change it to pre-cast in implementation, because pre-cast identically achieved by high technology, so the quality of concrete material is inappropriate with the standard specification but not so with reinforce (steel) quality. ….." TM05 F: Usually how many years of experience require as an installer? D: About 2-3 years is enough, and it is because he is on the field. But there was also 2 years' experience as a surveyor, really fast. F: Is there any particular educational background for implementing in the field? D: Minimum qualifying as site engineer is educated in Secondary Technical School of Building, but can be removed in the field at least have been involved 3 to 4 times as an assistant project. …..
Case 2: UB06 S: Actually the building we made is a fairly simple building, it does not need anything sophisticated. It is enough with the cooperation among stakeholders, and if there is synergy between them, I think it is not hard to achieve success. If it is there (GKU), because they are lacking experience. UB01 "We started sustainable construction at the beginning of the design process, in that process, we often did some discussion about the maintenance system. Because we were aware that buildings in Indonesia, particularly with the maintenance factor; the sustainability of the buildings or constructions can be well accomplished. In the design process, started from material selection, material, maybe also for spatial aspect, power source, we usually rely on electricity."
Case 3: BI09 The work is the same, but has more expenses. When the equipment is used in an unstable foundation, it does not work well. The production volume is quite small. But, when the system is repaired, it works well and its progress has been excellent BI010 Why do PP (anonym company) have a slogan of green contractor or green building? Has PP used it yet? If you use that concept, the unit price will be so expensive. It is good, but expensive. According to him,

Exemplary quotations
he has ever done a green building. When casting concrete, he did not use wood as its mold, but fibre which can be reheated, melted and molded. It is sustainable, but expensive.

(B.6.2.) Complementary assets

Public building project is a complex activity, which includes multi-disciplinary party and stakeholders. In regard to the project execution, heterogeneity of resources needs to complement each other in order to sustain the business activities. Complementary assets can be represented by software or hardware, and soft skill or hard skill. Even, different roles among stakeholder from different resources might be a complement for the project success. For instance, the complementary function among project team works is based upon individual experience that has multi-skills (i.e., quantity surveyor and site engineer with other skills in engineering drawings); otherwise, separation of role of procurement staff can be a medium to reach effectiveness and bring advantages for the project completion. See Table 6.10 for exemplary quotations.

Table 6. 10. Exemplary Quotations Template 2 Theme Six B.6.2.

Exemplary quotations
Case 1: TM01 "Me and Mr S who already had the experience; there is an opportunity for us to handle this KG market. The first reason is based on the basic experience." TM02 "I became a surveyor since the financial crisis (1998), particularly in civil. However, as executor, I concurrently (enacted as a) surveyors and executing as well. As executor I concurrently serve as a surveyor and executor as well." TM03 "I think success is a good co-operation from top to bottom, in addition supported by strong capital" TM05 "Conventional methods are around 6-7 days but we make it 4-5 days faster, though it depends on the lifting plate, it is around 2-5 days, floor to floor and it is possible to run faster in the field. For example, while the pile-works running, the production of girder and precast column can be started. When the pile work ends, it can be delivered to a location after getting permission. There is no architectural problem when it is ready in the element. We can follow the design what architect wants."

Exemplary quotations
Case 2: UB05 P: So, the problem was various. But, probably at least, there were a team leader or team leader technical coordinator for supervision, technical team leader in the auction, a technical team leader for planning that may always coordinate or be overlapping, so the message from planning would be applied in the implementation. UB07 "So there was only who is willing to work, and also took the lecturers (to involve in that project) which actually it's not their duty. That was supposed to do by administration staffs, people who support the work of administration on campus. So, there are staffs of TU (Administration), Head of TU, and... there is a unit that handles about infrastructure problems, both the building and administration."
Case 3:-N/A

(B.6.3.) Financial assets

Financial asset is fundamental for a construction project organisation. Performance of financial assets will influence the execution of project. Most of public building projects at the local authority rely on the state budgetary sources. This research identifies that the financial assets of case study one rely on the private party, and of the other cases generally rely on the state budgetary allocation. Budgetary inovation was found at the case study two. The local authority at University Building project obtains the financial assets for the project from International collaboration. Based on the interview analysis, this research also found that performance of financial assets could be captured from engineer's working performance and quality of construction. Mediocre performance of construction is generally influenced by lower tender price and low wages rate among engineers and labourers.

See Table 6.11. for exemplary quotations.

Table 6. 11. Exemplary Quotations Template 2 Theme Six B.6.3.

Exemplary quotations
Case 1: TM03 " I think success is a good co-operation from top to bottom, in addition supported by strong capital." TM06 "The first developer is directly appointed by local government of Pasar Jaya, unfortunately the price per se being offered not affordable by the merchants, because our merchants come from lower-middle class. Thus, I attempt to stay due to our previous budget-platform been setting-up."
Case 2: "Government is not consequent to the budget system. Although the government has set the standard in the form of Decree of the Minister of Finance Sri Mulyani in 2005, but it was still used as reference until 2011. Based on these standards to the value of a particular project, a PPK received specific honoraria annually. But the silly is national rules that should apply to all, it is trimmed and which application is local rules. So, the government of each city or district has its own policy, and it (honoraria) is smaller than the national standard despite on the APBN (national budget) project. While from PU (Public Works) it has ministerial regulations PU, the last ministerial regulation No. 45/2007, on the back of that rule there is a tabulation maximum honorarium. Unfortunately, it is never happened. Those are under 80% of the standard, ridiculously in all parts of Indonesia is as in such condition. If we are unlucky, even will be exposed by accusations that direct to negative, such as corruption, collusion and nepotism, or the term of 'bribery' or also 'mark-up', it's a problem. ---- The foreign investors are allowed in if I am not mistaken in 2020. So, now there are AFTA, the foreigners cannot get into the small scale. Foreigners are allowed in Indonesia only in the major project of tall buildings, a complex project. The characteristic is to consult with a fee of 10 billion upwards and to work chartering contractors, especially in construction work with value over 100 billion (rupiah). They are also when entering Indonesia must cooperate with partners from Indonesia and service providers with large firm company type. So that, the small service providers are free, and no problem. But if it had really opened later in 2025, the foreign service providers will enter also into small projects. Unfortunately, we are not ready because there was never any technical guidance. The term has existed, but in fact has never been done.
Case 3: BI02 "Although he is experienced, if the value of the project was too small, it made no difference to the success of the project. Related to auction rules, the winner bidder is selected from the lower price. So if the bidder wins tender at a lower price, even though has many experiences and personnel expertise, will

Exemplary quotations
not affect to buildings' quality." BI07 "One of these uncontrollably technical concerns is engineer's low wages. If an engineer is underpaid, he will not do his best performance. It results in their awareness to work on what is happening in the field.Only those who really care are going to take an action although there are supervisor, planner or construction manager. A planner may think why he has to care about the problem as his wage is low. A construction manager may have the same thoughts. This problem could be the trigger. Consequently, the allocated budget cannot be implemented."

(B.6.4.) Reputational assets

Reputation is an intangible asset for business, whether it is established by a particular value or quality in product or services. This research has identified some reputation assets provided in each case. However, the problems of procurement unit are on how to identify the reputational assets to enhance sustainable practice in project documentations, for instance**,** at prequalification stage during the procurement and the process of validation in the contractors bidding documents. The procurement committee is obliged to ensure the contractor's financial performance or cash flow that is manifested in the credibility of capital support for bidding a project. In addition, dealing with reputational assets is not an easy job, as the assets are still difficult to assess by the e-procurement system. The fundamental problem in this respect is caused by lack of trust between public building stakeholders. See Table 6.12. for exemplary quotations.

Table 6. 12. Exemplary Quotations Template 2 Theme Six B.6.4.

Exemplary quotations
Case 1: TM01 R: Our expectations are not too high in the beginning. The first relates to the profit margin, that is the natural thing. We obtain the profit margin, although unlike the expectations at the beginning, but not too far off the mark. The second relates to personal satisfaction. We think this KGM project is successful. Back to the first view of the site: muddy, flooded and slums that became something new like this. Back to the company as well, we feel satisfied. We see KGM project is the pinnacle of success in absorbing knowledge, from Santa, Palmerium and Kedoya Market. The highlight of our success in applying knowledge to revitalize KG, and we see, the merchants are also happy

Exemplary quotations
TM06 A : In quality satisfied, but the shape of the building is not, in accordance with the original plan that has been agreed.
Case 2: UB01 R: Verification could be done with a direct view of the original document. So prospective service provider must bring original document. Some of the documents we verified through the Internet. Certificate of expertise documents was checked based on the owner's name and the certificate validity period. The blacklist could be accessed through the Auditor website. Confirmation of employment contract of a prospective service provider was verified by the employer via telephone. Office of service provider if it was necessary, would do a site visit. Last was related to tax, the verification was done by looking at the proof of payment of taxes and the service providers must not late in payment. UB04 "The rules still have to be obeyed, because we are a government agency. Second, in addition to abide by the rules, we need to know exactly how to act on the field, because act on the field has a different strategy. If we talk about the third party, we must and the third party also wants to cooperate in following these rules." UB05 The advice given by the supervisor is not carried out by contractors, due to financial constraints. So if there is no money, how to do an action. That is the point. The condition often occurs particularly at Local contractor. However, the contractor of SOEs (State Owned Enterprises) that I was involved for several times to supervise the building project at Faculty of Economics and Business, action or technical notes as input to the contractor, immediately followed up. It turns out after we examine, as we ask the relevant parties, if it is indeed the main obstacle of the local contractor is financial condition. The phenomenon of local contractors is working on projects beyond their financial capabilities "Anyone who worked on the project could have benefited. It's the start that makes unhealthy competition, so many companies that only formalities bid have no competitiveness. However, for contractors who have a reputation, they already have a standard price per square meter that sometimes do not want to bid on the job under the standard price they already have."
Case 3: F: Based on experience in your investigations, is the experience of building practitioners impact to the success of the project implementation? H: absolutely no, for condition that we examined did not like that. Although he is experienced, if the

Exemplary quotations
value of the project was too small, it made no difference to the success of the project. Related to auction rules,the winner bidder is selected from the lower price. So if the bidder wins tender with lower price, even though has many experiences and personnel expertise, will not affect to buildings' quality

(B.6.5.) Structural assets

All the structural assets are built throughout networking among mutual parties and arrangement of internal organisational function. In this respect, the structural assets are apparent in different category and priority for operational. See Table 6.13. for exemplary quotations.

Table 6. 13. Exemplary Quotations Template 2 Theme Six B.6.5.

Exemplary quotations
Case 1: TM05 D: Yes, we have an expert for the company, like Mr. ISWN, whatever problems that happened in project we will ask his advice. We also have SIPB (Permit Letter) because we also act as field planner for Design and Build System. TM02 S: Since the project of PM, Mr. R memorized it. From the beginning of the project PM, KD and this project, the subcontractor is GK. But GK ever changed the name of the company in the project of KD but the people in it still the same. Perhaps based on these considerations, so there is no separation of Mechanical/Electrical (ME) contractor.
Case 2: UB07 "We know that Engineering Faculty is engaged in education, and then to deal with the specific matter about the projects, especially in this building matter, it was not focused. So there was only who is willing to work, and also took the lecturers (to involve in that project) which actually it's not their duty. That was supposed to do by administration staffs, people who support the work of administration on campus." UB06 S: There has been a feeling, but because we were in accordance with procedures as well it should be. Maybe the auction team was also less likely to take risks when making a winner decision. I'm not too experienced in the auction. In my opinion, the auction team should take the runner up as a winner if they felt less confident with auction nominee which on the first place. In fact, the auction team did not dare,

Exemplary quotations
they may want to be 'a safety player', no objections, and no complaints, and probably they did not want to be bothered.
Case 3: H: The successful organization if every party involved carry out their functions properly, especially its supervisor consultant. If the supervisor, consultant is active, engage on the procedures effect, its work's quality is relatively much better. -- F: Are there any examples? H: yes there are, a hospital in Kudus, hospital in Rembang, BPDs' building (Bank) almost all in Central Java, good products. Another building is a project funded by aid, but self-management. Because it's a self- management, we reviewed in Pemalang region, a junior high school building. The fund, because of their good self-management, the administration is also relatively good, then it has good physical.

(B.6.6) Market assets

The market assets become a reason and also hope in such expectation of company owners. That assests can determine a business is reliable and profitable. Each project has its own market assets to configure the sustainable business. In fact, the revitalisation of a traditional market in Jakarta has its own existing merchants as the market assets. The contractors ensure that apparent existing customers on the project The university building project has an annual prospective students as market assets. Since Higher Education becomes a priority of human development, there is market assets from registered student per annum. However, in the building investigation, the market assets are provided by local manpower or employability andvarious resources of construction materials See Table 6.13 for exemplary quotations.

Table 6. 14. Exemplary Quotations Template 2 Theme Six B.6.6.

Exemplary quotations
Case 1: "So based on the experience we already have, we immediately know that KGM is a great project. Even though we have difficulty on the price, where where the budget of construction the market building will be revitalized will be charged to merchants. Price is determined not cheap, but very low or virtually lacking. For example, in other markets such as Koja Market, lot market price of 13 million per square meter. It was not the cost of the building, but the fees charged to merchants. But, KG market is the only

Exemplary quotations
cost for 8.5 million/m2. While the market stalls of Koja could reach for 15 million per square meter, and our stall at KGM project only 10.5 million per square meter, the price difference is quite far, right?."
Case 2: E: "So this is interesting as well, it has been a national problem, who knows how long could be achieved…, it has become a big question for me. So, generally, the problems are same, there is a rule, although there will be small biases. But in fact, if we apply, it is sufficient if we want to. However the one who becomes a leader in each institution as well as in the region have different interests. He (the leader) is called "konco system", friend of the system; they make it there, in order to keep it safe for him. It does not mean to safe the project nationally, but safe for the people, for the officials. Until now all still like that. So, for example, there are people who are experts in civil buildings, experts of structure and long time experienced, but he is not used because he does not close to its officials. This happens a lot. "
Case 3: BI02 "Buildings that have substantial project value, is usually much better. Because first, the contractor definitely has good qualifications and better management. Only that success should also be supported by all parts involved between the project owner and the consultant (designers and supervisors), its management should be good." BI04 "Based on my observations, it seems that maintenance issues and renovation have not been considered by the engineer (planner), although in term of its rules such as laws and regulations are clearly decanted…Meanwhile, if we look at the phenomenon of its quality indicated that lifespan planning does not reach as the regulation in force. In fact, in just a few years the building established, there was a change based on the initial design, either partial or total. Sometimes, I get confused between the rules that have already taken properly, then from the planner did not think wisely."

C. Theme seventh: Path Dependencies

(C.7.1.) Previous investment and business developments

The track record of the contractor company during the business activities often represents their experience. The previous investments and how the business has been developed can be enacted as an experience. Case study 1 illustrates transformation of business activities from related engineering based or by developing experience and supported by sufficient capital investment. Moreover, the other cases use training and

education investment for employee or staff and stock up materials earlier as strategies to develop the business. See Table 6.15 for exemplary quotations.

Table 6. 15. Exemplary Quotations Template 2 Theme Seventh C.7.1.

Exemplary quotations
Case 1: "The fact is at the beginning of the company's establishment, we do not intend to take this KGM project but as a supplier of ground achor and infrastructure projects"
Case 2: UB04 "A: Many, for staff if we consider it necessary, then will be included in a course. There are several courses of procurement of goods and services, we include it. If for some, we also include them to course yesterday, how to provide a good form of customer service. We are also in-house training here, it is also to (fill) capacity building." UB05 "There are some contractors who anticipate by stocking the material earlier. According to their confession the courage reasons to stock up materials at the beginning give a significant impact on the cost of demobilization material. It can reduce the cost of labour in the field, and finally it is much easier to control the quality. But in reality, it is becoming a burden for the technical team to maintain quality control so that the project can be completed."
Case 3: N/A

(C.7.2.) Established routines

Finally, the last aspects of asset position are established routines. In regard public building projects at local authority, established routines for example building procurement. A way of improving the public building organisation and stakeholders to achieve sustainable practice is influenced by established routines of each party involved. Factors that influencing routines in local authority contex are local political atmosphere, disparity of economy among authority level (provincial, regency or city level and special authority). In Case Study 1, the local authority focused on capability to change the environment of traditional market by absorbing knowledge from previous experience of revitalisation and focuses on merchant expectation in achieving quality of

building specification. Unlike in the other authorities (Case Study 2 and 3), established routine is adopted from local rules in public building managements throughout the regular investigation, as part of accountability in local authorities.

See Table 6.16. for exemplary quotations.

Table 6. 16. Exemplary Quotations Template 2 Theme Seventh C.7.2.

Exemplary quotations
Case 1: "Our expectations are not too high in the beginning. The first relates to the profit margin, that is the natural thing. We obtain the profit margin, although unlike the expectations in the beginning, but not too far off the mark. The second relates to personal satisfaction. We think this KGM project is successful. Back to the first view muddy, flooded and slums that became something new like this. Back to the company as well, we feel satisfied. We see KGM project is the pinnacle of success in absorbing knowledge, from SN, PM and KD Market. The highlight of our success in applying knowledge to revitalize KG, and we see, merchants also happy"
Case 2: E: As far as I know still 50:50, depending on the rules of the local region. Jakarta may already supports but in Surabaya, Batam and Semarang have not been yet, it just because there. In Jakarta called PPAK, Development Control of City Architecture, when it approved pass, then part of the building structure. So experts of structure are also tested. Such a test, I also experienced SIBP then the ME and finally the principle permits is out in less than 3 months. Each project in Jakarta is already enacted in such procedures, but in Semarang has just started in 2012. I also do not know exactly about this because it is still new, but the best is in Jakarta. First time in Indonesia is Jakarta then followed by Batam then Surabaya and Bandung. Semarang is a bit behind E: It is possible that only IMB (building permit) is not enough. After or inside IMB there are other licenses of region e.g. we use extractive material type C, including the entry permit of heavy vehicles enter the city. It must be paid, but in practice it is not so. Heavy vehicles such as Long Vehicle which carrying heavy equipment on it, enter the city, there should be a permit. If it's not, could be caught. Before going into town there is such thing named weighbridge (truck scale). So we still have so many barriers that are not clear. This is how to organize it, plus against environment AMDAL (Environmental Impact sAssessment). EIA formally exists, but it's different in each area. … If we consequence, this project should be stop and cost of the experts was returned to state treasury, but the reality was not like that. One of the weaknesses was because the consultant fee was Lump sum. It was not right, should be in unit price; Easy to check one by one so man-month and more clearly in the calculation. As my experience in Awur Bay, in the middle of work we could return to the state treasury.

Exemplary quotations
Phenomenon like that still occurs until now. I have reported to BPK (auditing firm) and BPKP (financial and development control agency) and several workshops, but their responses said that to use Lump sum (per diems) system because it is easier. However, it turns out that there is more behind it; that if they are serviced in a city, there will be a give of 'pocket money'.
Case 3: BI011. Local government as budget users always worries about this issue. Quantifying indicators of progress have been achieved in a particular period. This phenomenon likely enforces the decision maker to deal with manipulative report rather than quality performance on the ground. I believe that once the progress assessed by quantitative parameter rather than realistic performance, it cannot be achieved such a sustainable performance anymore.

6.3 A Strategic Approach for Enhancing Success in Public Building Project at Different Levels of Local Authorities

The sustainability practice were drawn for each level of local authority. To address the operational definition of strategic approach, this research proposes an interaction model to examine the project success. The performance is associated with the intensity of interaction among local authority, contractors and end-users during project life cycle as discussed in Chapter 4. The interaction model is presented in Chapter 7. Furthermore, these strategic approaches were used to formulate the developed Framework Sustainable-Dynamic Capabilities (FSDC) in the Public Building Project. The discussion of sustainable practices is elaborated into three case study analyses, and will be explained in Chapter 7. Finally, the interaction model of LACU which indicates the intensity of interaction among key stakeholders, can be utilised as a decision-making tool to identify the project success.

Based on the application of dynamic capability framework, using Template 2 and combined with the results of Template 1, this research found that each case study has demonstrated a strategic approach to enhance the success of public building project. As mentioned in Chapter 5, the unit of analysis relies on the level of local authority. Thereby, the approaches presented are based on the level of local authority accordingly.

In regard to the managerial and organisational process, public building management at different levels of local authority has a distinctive approach to enhance project

success, in terms of coordination, learning process, transformation resources, and capability of stakeholders, as presented in Table 6.17. Based on the coordination aspect, public building project at province level reveals that effective organisation could be implemented through a simple structure and egalitarian through the organisational culture on daily basis. Although the other level of authority favours to be a bureaucratic organisation style, the influence of local leader and parliament parties at the regency and city level is inevitable.

The public building stakeholders derive the strategies of coordination to learn the improvement of project management organisation differently. The learning process at the province and regency/city level still focuses on how the procurement overruns the project; meanwhile, at the province level, the learning process already focuses on the end-users-based and efficiency matters. The reconfiguration or transformation in public building management found that the province level (Case 1) utilises the changes of business activities to encompass the opportunity of project success. Nevertheless, the bureaucratic organisation style at special authority and regency/city level is unable to break rules for innovations, particularly at project institutions easily. Thus, the strategic approach to enhance the project success can be made by changing habits of the occupant as undertaken at University Building and the local leader intervention at regency or city level's public building projects.

The strategic approach based on the asset positions of public building stakeholders should consider the efficient utilisation of the project resources, in terms of skilled labour, experts and networking among sub-contracting suppliers or specialist contractors to accelerate the project completion and to obtain outstanding performance.

Path dependency would be a rare aspect in public building project at the local authority level. Most of the projects have faced the obstacles, namely lack of experience in particular project case. However, to overcome the current obstacles, the stakeholders typically rely on their capability, by utilising either the financial performance or technical capability.

Table 6.17. Strategic Approach for Enhancing Success of Public Building Projects at Different Levels of Local Authorities

Dynamic Capabilities View	Province (Case 1)	Special Authority (Case 2)	Regency/City (Case 3)
A. Managerial and Organisational process			
A.5.1. Coordination/ Integration	Effective organisation (egalitarian)	Bureaucratic organisation under the university institution (top down)	Bureaucratic organisation (top down) influenced by political aspect of local leader and parliament parties
A.5.2. Learning	Strategies of execution in terms of end-users' characteristic and management of project location	Market research and developing mechanism of procurement	Market research and developing mechanism of procurement
A.5.3. Reconfiguration/ transformation	Changes in business activities	Changes in habits of the occupant	Intervention of local leader to the building project institutions
B. Asset Positions			
B.6.1. Technology	• Innovation in the project by efficient, effective and transparent execution • Subcontracting with other parties	Synergy among stakeholders throughout design process, for instance: simulation technology, laboratory experiments or spatial modelling to optimising the resources	Synergy among stakeholders throughout design process, for instance: simulation technology, laboratory experiments or spatial modelling to optimising the resources
B.6.2. Complementary	Complement tasks function among members of team work is based upon individual experience who has the multi-skills (i.e quantity surveyor and site engineer with other skill in	Separation of role of procurement staff	Separation of role of procurement staff

Dynamic Capabilities View	Province (Case 1)	Special Authority (Case 2)	Regency/City (Case 3)
	engineering drawings)		
B.6.3. Financial	• Sufficient capital for running the project execution • Organisational approach from bottom-up	• Innovation of local leader • Collaboration with investors or other institutions	• Standard wages of engineers • Standard prices of construction value
B.6.4. Reputational	Centralised system, in terms of procurement document authorisation and validation or assessment of service providers	Identifying cash-flow performance in a particular period	Revisiting the lowest price in selecting contractors
B.6.5. Structural	Networking by mutual parties	Structuring authority's management into different organisational functions	Category and priority project
B.6.6. Market	Existing market merchants (market traders)	Population of students per annum	Local manpower or employability, various resources in construction materials and local culture that have been growing up.
C. Path Dependencies			
C.7.1. Previous investment and business development	Transformation of business activities from related engineering based or by developing experience and supported with sufficient capital investment	• Training or education investment to employee or staff • Stocking up the materials earlier	• Training or education investment to employee or staff • Stocking up the materials earlier
C.7.2. Established routines	Absorbing knowledge from previous experience (of revitalisation) and focus on merchant expectation in achieving the building specification. In other words, focus in capability logic (changes for strategies objective)	Local rules in public building managements throughout regular audits, as part of accountability in local authorities	Local rules in public building managements throughout regular investigation, as part of accountability in local authorities

Dynamic Capabilities View	Province (Case 1)	Special Authority (Case 2)	Regency/City (Case 3)

Further analysis of strategic approach based on the dynamic capability aspect will be presented in Chapter 8 and the sustainable practices to enhance project success would be discussed in Chapter 9.

6.4 Summary

This chapter has established an understanding of strategic approaches to enhance sustainable practices on public building projects at the local authority level by analysing interviews data. There are two aims of this analysis: first, it is to capture the responses of public building practitioners at different levels of authority according to their experience throughout project organisational perspective, and sustainable practices based on the dynamic capabilities framework; second, it is to achieve in-depth understanding of project success during the project's lifecycle by three different actors: local authority, contractors, and end-users. The analysis, using two templates was applied to extract the systematic code for twenty-four interview transcripts based on seven thematic codes. Template-one consists of four thematic codes of key stakeholders: Local Authority (LA), Contractor (C), end-User (U) and interaction of LACU. Template-two consists of three thematic codes, which represent three aspects of dynamic capabilities view as developed by Teece, Pisano and Shuen (1997). All Templates have been regarded as the highest-order level, and the lower level of thematic codes emerge from initial framework and analysis. As a result, the fifteen thematic codes are used to identify the research findings. Each thematic code was discussed to answer three key research questions. In addition, the direct quotations from interview transcripts have also been extracted to illustrate the emerging themes.

Interpretation of interview presents an extracted discussion of relevant themes from interviews and justification supported by exemplary quotations. There were three discussions presented in the analysis; sustainable practices, dynamic capabilities in public building projects and the strategic approach at different levels of local authority

to enhance project success. The findings in this chapter were corroborate with the case study analysis and application frameworks in Chapter 7 and 8. Further, the discussion in Chapter 9 will address the research questions, that is, “What are the strategic approaches?”, “Who are the key stakeholders?” and “What are the relationships between the stakeholders? How can they be measured?”.

CHAPTER 7 Analysis of Case Study: Sustainable Practice of Public Buildings Projects at Different Levels of Local Authority

7.1 Introduction

The purpose of this chapter is to examine the initial framework of dynamic capabilities for the public building projects as designed in Chapter 4. On the application of the dynamic capabilities component, the developed framework was created by semi-structured interviews from twenty-four building practitioners in three case studies. The analysis of the case study demonstrates how the projects at the different levels of local authorities enhance the sustainable practices in actual public building projects. The interpretation of the developed framework, created from the grounded approach, is presented here. The validity of the developed framework is also discussed.

Based upon the case studies designed in Chapter 5, three different levels of local authorities representing three case studies were selected and analysed. The first case study was about the revitalisation of traditional market (TM) building in province level. The study demonstrated the strategic approach for sustainable revitalisation traditional market building as initiated by provincial authorities and became the first successful role model for Indonesia. The second case study was about the University Building project in special authority level. The University Building (UB) project case study focused on success factor from the main perspectives of procurement unit. Finally, the third case study was about Building Investigation (BI) in regency or city level in Central Java. This case has been drawn into the investigation of building failure and defect from public funding. In order to satisfy the methodological requirement for a thick description, each case study is described in detail by the designed format of the case study report in three sections: the introduction of project, chronology of case study, and summary of the case study.

7.2 A Case Revitalisation Traditional Market in Province Level

7.2.1 Introduction of Project

The Ministry of Trade, Republic of Indonesia, initiated revitalisation for the traditional market. The program aims to respond to the proliferation of modern markets, such as hypermarts or mini markets in the urban area, particularly in the capital city of Jakarta. Market research by AC Nielsen (cited from Semeru 2007:1). found that "an increasing modern market by 31.4 percent per annum and decreasing traditional market by 8 percent per annum". Semeru, a Non-Governmental Organisation (NGO) stated that the starting point of decreasing performance in traditional market since the economic crisis begun in the early year of the Indonesian reformation order. Additionally, the liberalisation of the retail trade sector has downgraded the traditional markets. In contrast, the emergence of large foreign supermarkets in many Indonesian cities including Jakarta yields an argument that the decrease of traditional markets is not merely caused by modern market growth. There are also internal problems with the traditional markets around Indonesia. Most of traditional markets, lack good management, have apparently "limited facilities and infrastructure", are messy, not hygienic and sporadic street vendors which are unfavourable to the customers (Semeru 2007:3).

Jakarta, as the capital of Indonesia, is the place of the "superhub" of circulation of daily needs or consumable stuff throughout traditional markets. Once the economic crisis hits the traditional markets (such as in 1998), Jakarta would be the first victim of this "disaster" with direct impact on the public economic condition. Finally, the central government has ratified the regulation concerning the modern market impacts through the Commission for Supervision of Business Competition (*KPPU: Komisi Pengawasan Persaingan Usaha*). Since 2007, there have been many regulations from the central government to the local authorities with regard to the commitment to increasing the competitiveness and protection of traditional markets. As a proof of the government response to that aspiration, Presidential regulation No.112 of 2007 regarding Organisation and Direction of Traditional Markets, Shopping Centres and Modern Stores provides an impetus against the liberalisation impacts and empowerment efforts in the micro economy sector. Furthermore, the Ministry of Trading Regulation

No.53/M-DAG/PER/12/2008 provides a guide for the arrangement and development of traditional markets, central market, and modern stores. These regulations are part of the infrastructure programme to support 'Revitalisation of Traditional Market' in urban area. Jakarta becomes a role model in such programmes.

PD Pasar Jaya as the special agency of *DKI Jakarta* Province has been enacted as an authority which is responsible for the development of traditional markets. Recalling for the regulated product with regard to empowering traditional markets to be more competitive, *PD Pasar Jaya* has been appointed to be an executor to succeed that revitalisation programme. KGM (anonym) project is the first successful revitalisation of traditional market project in Jakarta in 2009.

7.2.2 Chronology of Revitalisation Traditional Market Project

A. Programme Overview

In 2009, a collaborative effort was carried out between the special agency of traditional markets in DKI Jakarta province and a private construction firm. The local authorities of Jakarta set out to implement the revitalisation of traditional market programme as a response to the National programme from the Ministry of Trading, Republic of Indonesia. The revitalisation of traditional markets was intended to replace the current facility and construction with the new infrastructures, building and the facility supports. That revitalisation was also enacted as a strategic approach to encourage people beyond the competitive environment among the booming modern retail markets since reformation order begun. Since decentralisation implies the devolution of delivery service, responsibility and powers of the central government to the local authorities, it means that the traditional markets are problematic, and also become a mandatory case to deal with. This programme would be the first success story in Jakarta under the authorities of *PD Pasar Jaya* that encourage the particular approach towards sustainable practices in public building projects.

B. Profile and Case Context

KGM project is located at the North of Jakarta district. The building was built in 2013, and the total cost for construction about 12.4 billion IDR (Rupiah). This market

building was constructed using precast technology for the main structure. The architectural appearance of the building was modified to be three storeys. First floor was constructed as semi-basement, the first floor has the same elevation as well as main entrance and front-parking area and the second floor. The total floor area is 2,559 sq.m and the total project area is 3,630 sq.m. The detailed profile of the project is presented in Table 7.1.

Table 7.1. Profile of KGM Project

Component	Information
Level of authority	Province
Focus perspectives	Contractors
Planning Concept	• Design and build contracts • Simplicity and strength in material quality • Affordable price for small merchant or traders • Easy maintenance (Energy efficiency) • Free from annual flood • Traditional appearance in modern structure and accessible for people around location
Structure	• Three storey building by split level concept, the material element of structure by pre-cast concrete • Roof from steel structure and semi-transparent covering • Foundation by mini-pile
Environmental facility	Waste water treatment plant is integrated by drainage system (internal and external building's area)
Construction cost	11.5 billion IDR (around US $ 1.15 million) including tax
Duration project	50 weeks
Tender System	Competitive selection by market traders and approved by local authority (PD Pasar Jaya)

C. Case Description

The issue regarding revitalisation of a traditional market in Indonesia becomes the emerging programme as a reactive movement against the significant impact of invasion

of modern retail markets in urban areas. The dense areas in the city like Jakarta have been hampered by such phenomena. *PD Pasar Jaya*, as the local agency plays important roles to engage with traditional market authorities in DKI Jakarta Province.

In 2012, there were 153 traditional markets under the authority of *PD Pasar Jaya*. However, only 26 out of 97, which condition was below the standard, and then in 2011, the provincial government through budget allocation renovated them (*www.pasarjaya.com*). The local authorities were optimistic in dealing with revitalisation efforts among the market condition. The phenomenon of sporadic street vendors around the traditional market could be a significant factor in the decreasing amount of market's stalls revenue, and it leads to decreased quality of the environment. To that extent, market traders become reluctant and perceived under estimate in the following process of revitalisation. The local authority, provincial officials in Jakarta are facing dilemma in allocating budget for revitalisation of traditional market building. Most of traditional market buildings are relatively old with the age around 20-30 years, and need to be replaced by new construction as well. However, the presence of street vendors at the opposite of traditional markets, still become a persistent problem, in terms of economic activities and environmental deterioration. Thus, *PD Pasar Jaya* turns to engage with empowerment of local market traders in every revitalisation afterward.

PD Pasar Jaya has been conducting several revitalisation programmes in traditional markets prior to this project. The other projects were apparently devastating in comparison with the existing market condition and some of them were failing to follow the spirit of sustainable provision. Let alone the market traders become "victims" on the building construction impacts. Unfortunately, the traditional market becomes "a dead market" after maladjustment of the policy issued by the authority. In fact, the revitalisation just modernises the physical buildings rather than sustaining the social-economic impacts, for instance, the cases of KD Market, PM market, and SN market (anonym).

KGM projects become the first success model of local authority in revitalising a traditional market in Jakarta. How previous projects were failing and why this project overcome the challenges to change KGM must be a unique case in regards to the

sustainable practices. The chronology of this case is figured out by a flowchart presented in Figure 7.1.

Figure 7.1. Revitalisation Stages of KGM project (source: Archival survey KGM)

As a lesson learnt from previous revitalisation of traditional market, *PD Pasar Jaya* asked the market traders of KGM to submit their reliable candidates for these investment purposes.

Stage 1: Socialisation to Market traders

Socialisation was the initial stage for contractors or investors to declare their interests in revitalisation projects. Local authority was enacted as the facilitator to deliver the aspiration of market traders for approval process. This was the occasion for making some deals in terms of market arrangement (preliminary design of market building) and the project costs must be paid by the market traders. According to the evidence on the field, this socialisation took six months to achieve a deal between contractor and local authorities under the approval reference from the market traders.

Stage 2: Business Plan and Feasibility Design

The construction firm prepared the Business Plan through different kinds of expenditures, Non-Physical Expenditure and Physical Expenditure. The physical expenditures were including permanent buildings on the traditional market and temporary shelters for merchants (*TPS: Tempat Penampungan Sementara*). The permanent building expenses consist of expenses for architectural, structural and mechanical electrical (ME) works. The nonphysical expenses consist of the socialisation process of the merchant, supervision cost, planning consultant cost, and notary fees.

The business plan was assessed by PD Pasar Jaya and the representative market traders (Team-11) through a presentation on 22 December 2009. The day after the meeting, constructors officially requested Memorandum of Understanding (MoU) with local authorities as signs for granting the projects. Thus, on 7 January 2010, the authorities granted the contracts to contractors (*MBS* company). Feasibility design was also conducted in parallel with a composing process of the business plan for this project.

Stage 3: Memorandum of Understanding (MoU)

The project collaboration was officially established after the Memorandum of Understanding (MoU) was signed by *PD Pasar Jaya* and *MBS* company on 4 February

2010. Moreover, this MoU was also extended from 30 July 2010 since the internal management in the *PD Pasar Jaya* was changed. The amendment of the MoU was valid in three month term time until 3 November 2010.

Stage 4: Approval and Construction of Temporary Shelter

The next stage was an approval process for local authorities by reference of market traders. This stage is called 'Reconciliation' process. The process was conducted for around six months. Then, it was continued by the construction of temporary shelter for market traders. The approval process in terms of selling price proceeded after the contractor made a final presentation in front of local authorities on 5 December 2011. The major issues have been considered by local authorities and are pointed out in three points:

First, regarding the sales prices of market stalls, although the generic problems tended to focus on previous experiences in controlling the maximum profit margin through additional stalls for keeping the market alive in the post-construction, it seems that reconciliation among local authorities and contractors aimed to deal with maximum ranges of additional stalls. In fact, the maximum additional stalls with allowable margin had changed from 20 to 30 percent. Second, regarding the selection of market traders reliable to buy the extra stall, the authority of *PD Pasar Jaya* indicated that additional stalls could be bought under the terms and conditions: as long as the stalls are not allowed to hand over or re-sell to another party. *PD Pasar Jaya* argued that terms and conditions which have been crafted, tend to create a balancing mechanism of social function inside the KGM market. Based on the experiences from other revitalisation of traditional market projects in Jakarta, most of additional stalls were taken over by new party as property investments. Even, most stalls which had been taken over were never occupied by buyers and this condition led to imbalance of traditional market activities or become "dead market". Third, the mechanism of re-settlement at the temporary shelters would be linked with traffic of goods and people around the area of existing market location. The coordination between local authorities at the lowest level such as "*Lurah*" (local leader at sub-district government) or "*Camat*" (local leader at district government) became a consideration for projects of stakeholders (Local Government

Act No.32, 2004). The evidence of the communication regarding this issue has been well documented by the contractors and local authorities (Field observation July 2013).

Stage 5: Project Execution

The physical construction of KGM market was executed in February 2012. However, in the first three months, the construction was not supervised by the building control staffs or supervision consultants. Undoubtedly, the absence of supervision of KGM project execution for three months was caused by bureaucratic problems in a procurement consultant by local authorities. There was no committed party in dealing with the authorities to be part of building control. Fortunately, the contractors had the outstanding experienced personnel. Nevertheless, there were a few accidents blown up around stakeholders in the middle of roof construction. Those accidents caused delay for a couple of months.

Stage 6: Lucky draw of market stalls

The arrangement of market stalls was distributed to market traders fairly by lucky draws, whether for the former market traders or for the new market traders. The process was conducted by local authorities independently in front of stakeholders and the traders as well. Once the market traders were qualified to join this stage, they deserved to be involved to the event.

PD Pasar Jaya was enacted as the facilitator and independent chair during the process of lucky draw. After the stall's distribution was accomplished, the local authority played influential roles to the market community (KGM market traders) by independence in such purposes, also to enforce the traditional market communities to comply with the procedures of market revitalisation. It sounds new in public building regulation by the modern public building management. Nevertheless, this case can refer to FAO Market Infrastructure Planning Guidance (White 1999) to complement the existing building regulation.

Stage 7: Negotiation with Bank for Credit Agreement and Signing Contract for market stalls

In accordance to the business perspective, this case has engaged financial support from Indonesian State Bank due to the market trader's Credit Agreement. This stage was also part of a strategic approach of contractors to deal with sustainable practices in terms of economical perspective. They should maintain the healthy cash flow as proposed through business plan. All the negotiation documents could not be accessed due to ethical consideration. In fact, the activities could be observed from local authorities' official website and the activities have been captured on the day of field observation in August 2013.

Stage 8: Decommissioning Stage

Over a year of construction execution, the final stage in this project was decommissioning. The mechanism of decommissioning had different activities compared with a common projects' best practice. Engagement with documentary records along the project life cycle and intensive communication from authorities to contractors and end-users seems like more than business as usual. These situations could be identified from the gestures of informal discussion among authorities and contractors on the field survey and mutual check process at the end of the project phases.

The authorities played the role as a regulator. They stated that they relied on documents as evidence in the decision making process, including their press released to the public or the media. They should enact on the defensive position. In other words, the authorities stated it is not in their capacity to be blamed after the traditional market has been occupied, whereas this case is related to financial auditing by the state auditor afterward. Meanwhile, the contractors posited that they should achieve the goal by authorised documents or recognition from local authorities from their productivities. However, local authorities and contractors had agreed that KGM is the first successful model of revitalisation project in the DKI Jakarta province. The general stage of the project activities as compared with conventional approach is seen in Figure 7.2.

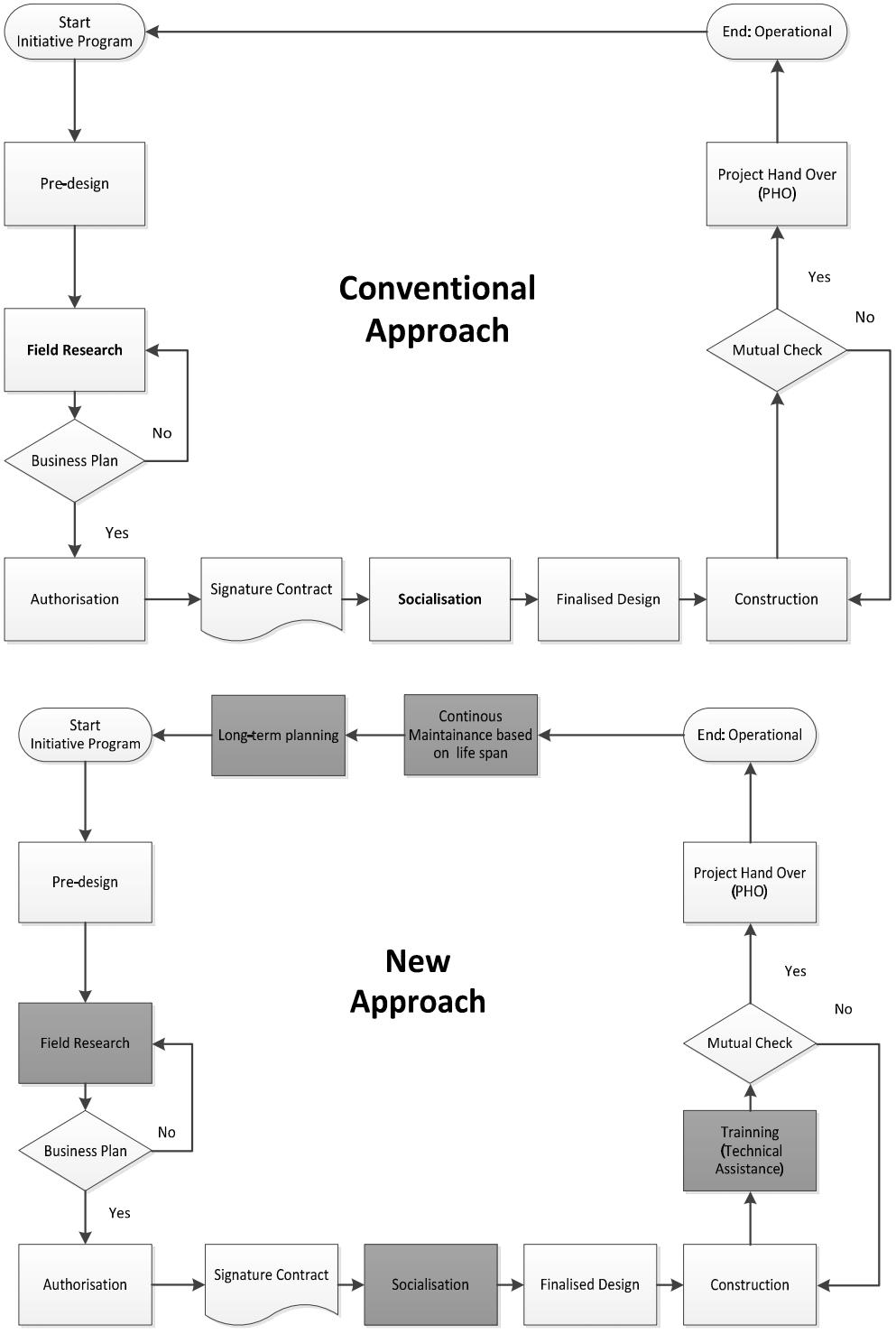


Figure 7.2. General stage on Project KGM Based on Documentary Stage

The different practices on the general stage on Figure 7.2 denote that the grey coloured block has distinctive approaches than the other similar projects in the context of public building regulation.

- First, the field research was conducted by grounded approach on the daily basis of KGM. In accordance with the guidance for decision of market infrastructure planning, White (1999:i) stated that the improvement of traditional market would be "a complex process" that requires "substantial capital investment". In regard to the investment decision, the stakeholder should have a comprehensive assessment in terms of market condition, demand for facilities, and reliability of financial factors.
- Second, socialisation approach became a challenging stage for contractors. Once they failed to convince the market traders, they would lose the contracts and any previous investment (as business risks). The excellent approach in revitalisation traditional market KGM provided by contractors became a role model by local authorities along the implementation programme of revitalisation of traditional markets in Jakarta. Jakarta province as the capital city and the back bone of Indonesian construction Industry, is the role model that could be generalised on the typical projects, it must be revisited based on the local characteristics. However, this research boundary is specifically for urban areas, but in accordance with the guidance of market infrastructure planning, it is stated that it is limited in terms of management approach rather than constructed building and civil works. In summary, there are some opportunities to encourage the local authorities for guiding public building communities in this specific task, provide such a guidance traditional market building regulation in a more applicable and simple way to follow by practitioners.
- Third, the technical assistance was part of the contractor tasks in the project life cycle, to ensure the building occupant understands the equipment system on daily basis. This training was also utilised by local authorities as an assessment tool before a license for decommissioning stages will be granted.

D. Results

It is a remarkable project in the provincial level, since Revitalisation Initiative programme was released by the Ministry of Trade, Republic of Indonesia in 2008. The development process provides the new environment at a time the radical changes, either in business purposes or sustainable practices within the context of traditional market building in urban areas like Jakarta. A strategic approach from this case is pointed out by a consideration on the philosophy of "alive-market" and complexity as an indicator of project success. Finally, the harmonisation endeavoured between local authorities-contractors and end-users are also captured with the degree of satisfaction in this case.

1. Livelihood market as Consideration in Strategic Approach

A livelihood market is a core consideration in the strategic approach for revitalisation of traditional market buildings. There are numerous factors that will contribute to alive market. At least, two core factors were Strategic Location of the existing market and Merchant Behaviour during socialisation process. Both of them are interrelated factors which contribute to the traditional market performance before and after revitalisation.

a. Strategic Location of existing market

Adopted from urban development perspectives, a location would be a fundamental aspect to gain the value, particularly the market value of traditional market buildings. In most urban growth, location theory was developed in various perspectives (Wheaton and Schussheim, 1955, Issard and Coughlin 1957, Alonso 1964, Kain, 1967 and Suen 2005). The prominent debates are around the consideration into density area, emerging cost and the impact of the arrangement of such road network and infrastructure buildings that support the housing area. Alonso's theory would be adopted in theoretical sampling to generate logical thinking in such problems. Commonly, the theory is derived from the residential location model in economical perspective studies. Alonso's model assumes density of workplace is concentrated in Central Business District (CBD), while the residential area is located on the sub-urban area. However, the Alonso's model only applies in the flat area and street networks are assumed available aside the transportation system. The simplified model of location theory exists in one-dimensional scale around the city configuration. The traditional market as part of urban

infrastructure facilities should be located on the strategic position, in minimum cost, fit in the people income, population growth and technological changes of transportation and city shape (i.e. Land used and zoning) (Alonso 1964).

This research found the evidence that the revitalisation of traditional market has been influenced by a strategic location. A strategic location is defined from grounded through the field investigation and interviews with the managing director of construction firms, site engineer, the representative market merchants or vendor, sub-contractors and supported by related documents from this particular project. The details of each definition of strategic location can be seen in Table 7.2.

Table 7.2. Defining Strategic Location of Traditional Market Building

Respondent's role in the projects	Exemplary quotation	Defining strategic location (interpretation)
Managing director	'The first factor, it is a strategic market, crowded or not, alive or not. Do not ever buy a dead market' 'So, to make sure about it, we see the market at the first sight, still alive or not, if it is alive, we can see competitor there, the nearest market to project site. Do not ever build a market where there is a street vendor nearby 2 kilometres, there is another market, or there is a mini market (i.e.: Alfxxxxx or Carxxxxx- anonym of private market) it would be hard.	A strategic location is defined by the situation around there. Strategic terms are pullout by competition principles that alive market exists on the competitive location itself. A localised zone of economic activities would be a central consideration through the regulation.
Site engineer	"People around here certainly support. Through this market, their land could have higher resale value. This leasing office for example, we leased it from Pak Haji and he was excited because the selling price is higher than before so they can create shop, or leaseback. It has a lot of effects' 'For outside technical terms, KD market is rather quiet as there are street vendors of	Properties value in the post-construction would be enacted as evidence for how strategic the location is. A strategic location is a free value, which has a particular effect through the ideal distance between public activities or Central Business District (CBD).

Respondent's role in the projects	Exemplary quotation	Defining strategic location (interpretation)
	Pesing Market. It is very affected'	
Market merchant or vendor	'Thank God, this market is classified as a prominent traditional market since early established. There are not modern market retails such Alibabu or Indimax mini market (anonymous) in this environment, and the business situation is still very nice. In 2008 this market was built and looked more proper and, not seedy anymore."	Value added exists on the entity of the strategic location. People who live in this environment could be indicated by their proudness and vibrant trade. A strategic location is the generator for benefit after the built environment changes to be more competitive.
Sub-contractor	'We conducted an analysis to minimize the impact of construction risks and the reaction of society that do not harm them. If our construction goes well, they will not react. When we get a trouble in construction and it affects the groundwater, drilling, waste disposal, noise, it usually causes a reaction in the community around the project'	A strategic location has low risk impact for the projects, in terms of either negative reaction from the stakeholder and social communities around there or environmental effects, such as contamination on the groundwater, body of water and air pollution.

b. Merchant Behaviour in Socialisation Process

The second factor considered by construction firm is merchant's behaviour in socialisation process. Once the alive market is ensured to be a success factor, we could look at the behavioural aspect of the merchant along the socialisation. It will be difficult to collect merchant's repayment, thus the questions have arisen "Who wants to buy (stalls)?." This would be a dilemma when we evict merchants who are eventually closed (their stall) and then become a dead market. Certainly, construction firm has some deals that the additional stalls must not exceed thirty percent. Based on the long run experience in traditional market project, construction firms suggest the investors to be willing to take profits. They should also consider taking additional stalls not more than thirty percent.

"The thirty percent (additional stalls) figure is based on previous experience. It is *'Stupid'* if you did not learn from it. If it should be documented by the local government, many markets are dead after the revitalisation, for example Cibubur market. In the past, the market was alive, now dead, because of its very greedy developers. Developers also bought the land around it, two hundred percent of the initial area. Other examples are Santa market, Palmerium market and Kedoya market, and many more. If we want to be fair, I think KGM market is the most successful project in Jakarta, and many people agree, including PD Pasar Jaya"

2. Complexity Level

The complexity of revitalization project can be seen from the level of merchant complaint, the buyer, and PD Pasar Jaya. The differences are significant enough compared to the previous experiences of market revitalization such as Santa market, Palmerium market, and Kedoya market. The complaint rate is almost eighty percent. Meanwhile, Kelapa Gading Market project is less than ten percent, because the merchant is very cooperative, and not difficult to bill because the market is alive. It is probably hard if the situation along the socialisation process is not conducive enough. They will attempt to find any mistakes, although we are right. As if that is happening because the merchants complain about the changes and could be a detrimental effect to the projects in general. The market is like "People who is Powerless", when it enters the media, they (the media) will spice it up and raise a big problem. Merchants are 'the heart of market' as confirmed by Managing director of contractors,

"Merchants are the heart of the market, those who run market activity. So, we have to keep the previous merchants, we should not be arrogant by kicking them out of the market. Once again, merchants are the market's soul."

3. Degree of Satisfaction

Although the project gained successes, there was still dissatisfaction which emerged from market merchants. One of market traders also confirmed his satisfaction.

"In quality [aspect], [we are] satisfied, but the shape of the building is not [satisfying], in accordance with the original plan that has been agreed. I mean, vegetable stalls, fish stalls, meat stalls, surrounded by staple stalls. The big bazaar stall should be in the middle [of the market stalls area]. It turned out that because I did not understand the design-drawings, and we [team 11] very trust the investor, we do not consider. In addition, it turns out the building like this, that is directly facing onto the street is nice, but this is not good enough. People just pass by".

In summary, the two factors are significant in influencing the degree of alive market. The location of traditional market is affecting the people to visit KGM and demographic conditions, provided by city configuration (land use and zoning) will generate micro economy activities throughout the traditional market itself. Alive market is important for the micro-economic wheels, but the merchants should be the most consideration because they are "the hearth of the market".

7.2.3 Summary of Case Study 1

There was an important learning behind the success story of Revitalisation Traditional Market Jakarta. In collaboration between PD Pasar Jaya as Local Authorities and market traders as building occupant, the harmony through expectation on the project successfully enhanced the pinnacle of achievement, "alive mark". Contractor's experience supported the significant forces to lead the strategic approach. The contractor had proven that Jakarta Province authorities demonstrated a sustainable practice in the traditional market building. The distinctive approach of revitalisation in such traditional market is a role model for Indonesia. However, the particular guidance of revitalisation has not yet established in this area. The project performance of revitalisation was justified as a competitive effort rather than profit orientation as well as the previous experience almost around Indonesian Local Authorities.

The challenges from local authorities were responding by contractors through the value creations by the new feature of KGM Market. The contractor was the winner of market trader's heart, The newly built environment, facilities and upgrading into a competitive location, such a traditional market in modern features become a

breakthrough for other authorities in Indonesia. DKI Jakarta province has learnt a new approach for Revitalisation Process. The key success of this case study emerges from proactive engagement between local authorities, contractors and market traders (End-users). Undoubtedly, the importance of the micro economy exists on the phenomena of alive market, and it is sensible that the merchants are "the heart of the market."

7.3 A Case of University Building Project's in a Special Authority

7.3.1 Introduction of Project

This case study of University Building Project examined two building projects as comparative studies. The buildings are located in the southern part of Semarang city, Central Java Province, Indonesia. The first building was built in 2010, and the total cost for construction is about 5.5 billion IDR (Indonesian Rupiah). The first building has a prominent name SKW (anonymous) as part of CSR (Corporate Social Responsibility) program from National Oil and Gas Company. The three storey Reinforce Concrete (RC) building is supported by square pile foundation and has a total floor area approximately 2,240 sqm. That building was executed in 189 working days and 180 days of maintenance periods. SKW building is purposed for teaching activities in the Department of Geology. The decommissioning date was 22 December 2010, from contractor 'KC' and supervised by ED Firms Consultant (anonymous). This building has a distinctive success story in terms of the completion process in this authority.

The second building project is located on the opposite area of the first building on the different block. The building was built starting from 10 June 2010, and the total cost for the construction is about 13.85 billion IDR. It has a prominent name of GKU Building. The five storey RC building is supported with Hollow Pile foundation and has a total floor area approximately 3,500 sq.m. That building was constructed in 175 working days and 181 days of maintenance periods. GKU building is purposed for Faculty office and conference hall or meeting venue. The commissioning date should be on 21 December 2010. Unfortunately, the contractors just performed 47.25 per cent of progress. This situation caused the project to experience a dispute case. The major impact on this case was related to the public service, in particular education activities.

This case study would figure out the impacts of different strategic approach in regards to public building projects in special authority of Engineering Faculty in University Management. The case descriptions were gained from the procurement unit as representative of Faculty organisation.

7.3.2 Chronology of University Building Project

A. Programme Overview

University Building Project is part of the implementation of public building under the special authority. The special authority (SA) means that in governing their activities or project, it (SA) has a specific territorial area and jurisdiction power in particular educational purpose. University is part of higher education activities at ministry level. They have been located in province autonomy, but their responsibility is directed to the Ministry of National Education and Culture (Regulation No. 12/ 2012 about Higher Education). Since October 2014, the authority changed the name and system to become Ministry of Research, Technology and Higher Education (MRTHE). In fact, at some point in building project management, the special authority has a dualism role. As the administrative tasks, in terms of budgeting mechanism and responsibility of productivities, universities have a mandatory to report their performance to Directorate General of Higher Education (DGHE) as representative of Ministry of National Education and Culture (Now MRTHE). However, in regards to the building regulation and procurement activities, they should engage with another Department, whether in national level at provincial level.

At the national authority level, universities would engage with LKPP (National Public Procurement Agency). LKPP is categorised as a non-ministry agency under the coordination of Ministry of National Development Planning or National Planning Board. Meanwhile, at the provincial level, the universities have collaborated with the Governor and the generic agency under the provincial authorities, such as *Kimtaru* (Building Agency). It emphasizes that universities are situated between two different authorities, whenever they are governing building projects and whatever the funding resources would support. As consequences, universities are trapped in a diplomatic situation. In the prominent Indonesian‘s proverb, it is similar with ‘Standing on two

boats'. That phenomenon sounds contradictive with the spirit of 'Reinventing Government' in modern local authorities. Universities are enacted in two major tasks; the first task is dealing with efforts to educational development, the other task is considered through public building regulation. The ideal role should be 'steering' on the major task rather than 'rowing' or delivering services (Osborne and Gaebler 1992). In other words, the ideal task of local authority should be separated as a regulator rather than as an operator. However, from this case study, we could learn how the capabilities were built through the process of learning among the established routine and dynamic of the environmental situation (Eisenhardt and Martin 2000, Teece, Pisano and Shuen 1997).

B. Profile and Case Context

1. Profile of Procurement Service Unit

The activities of the procurement service unit regarding sustainable building project lie in the design process, maintenance purposes, selected materials for existing buildings and future design, and conduct competitive tendering. However, all activities still depend on state budgeting from Ministry of National Education and Culture.

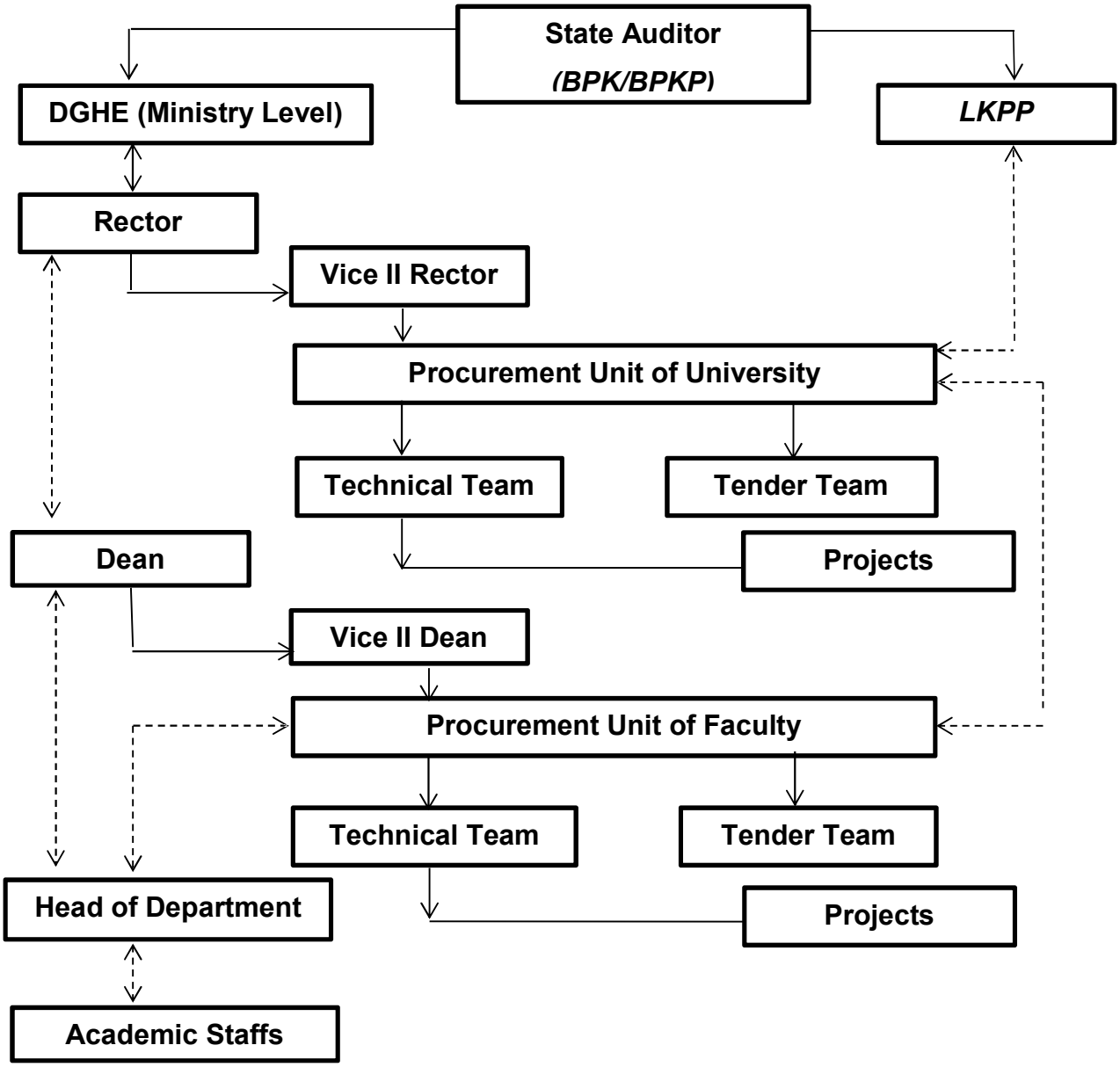
Procurement unit is governing procurement activities under special authority of state university led by a committing officer (*PPK/ Pejabat Pembuat Komitmen*). This institution is categorised as a central authority under the ministry level in Jakarta, but the operational activities apparently like in province level. Some of procurement unit tasks are also carried out in collaboration with governor levels of authorities. Especially in this case study, the procurement units could be in the university level or in the faculty level. The procurement unit is established according to local needs (faculty) that has significant allocation budgets in the university being studied. In addition, procurement unit in this case is established by a large faculty having a special supply of resources.

The main tasks of procurement unit are: first, conducting Compulsory Competitive Tendering (CCT) from an initiative programme of commissioning in a transparent and accountable manner; second, complying with standard ethics of procurement by their authorities.

In the operational level, the procurement unit has provided some generic task forces:

1. To develop a competent committee of procurement as the government requires due to presidential regulation. The procurement committee consists of tender team and technical team. A tender team is led by a chairperson and supported by some administration staff. A technical team consists of five personnel in different discipline of science, from civil engineering, architecture, mechanical engineering, or electrical engineering,
2. To prepare a comprehensive design and determine projects costing in a Tender Document Packages,
3. To monitor the procurement process as well as performance evaluation of the committee. This has been included to ensure the optimisation of either the tasks or the optimum price. Optimum price means the cheapest price, but the specification and implementation method should be good in accordance with the assessment threshold.

Through the organisational perspective, conducting procurement activities is more complex rather than the other government institutions' activities. The procurement unit in university institution has a distinctive characteristic. The procurement committee members are originally from faculty members, most of them are academic staff. It looks contradictive in such main task force (Note: Recently, no splitting mandatory in the umbrella regulation regarding these tasks). Faculty members or academic staff have the main tasks of teaching, conducting research, academic assistance or conducting a voluntary programme to the public in each academic term (semester or quarterly). Meanwhile, in procurement activities, the staff members should act as a professional engineer in the building project. Nevertheless, these staffs have not been receiving professional compensation properly. It is arguable that academic staff as part of employee of governments. Even some of them criticise that scope of work is over the limits of their capacity and seems like crossing their professional area as an engineer. Moreover, the professional role of academic staff within the procurement activities still raises debates at the national level (LKPP 2011). The organisation structure of the Procurement Unit in this case is described in Figure 7.3.



Note:

___ = command line; -------- = coordination line

Figure 7.3. Organisation of Procurement Unit in University Building Project

In order to identify the characteristics of the projects, the profile of the project is presented in Table 7.3.

Table 7.3. Profile of UB Project

Entity	Information
Level of authorities	Special Authorities from Ministry Level in Provincial area
Focus perspectives	Procurement Unit
Planning Concept	• Simplicity and strength in material quality • Modern Facade with minimum lighting and easy maintenance • Major Functions for teaching activities and office administrations
Structure	• The material element of structure by Reinforced Concrete • Roof from steel structure and ceramic for covering • Foundation by mini-pile and circular medium-pile
Environmental facility	Standard public building for education purpose
Construction cost	GKU = 13.85 billion IDR and SKW = 5.50 billion IDR incl.tax
Duration project	GKU= 175 days, SKW = 189 days
Tender System	Compulsory Competitive Tendering (CCT) by qualification and open auction system of e-procurement under the procurement agency LPSE.

C. Case Description

University Building Project is emerged by national procurement system in higher education. In accordance with the roles of government institutions, the university must comply with the accountability principles within the major task forces. Due to Public Budgeting Regulation No. 17/ 2003, University as a Public Service Agency is part of the Ministry of National Education and Culture. They have a mandatory responsibility

to be accountable on their tasks of public service. Through particular task of infrastructure developments, the University is also enacted as the authority that arranges their facilities due to their internal capacity and financial capabilities, other potential revenue from annual tuitions, research fundings and other contribution from external resources.

There are various funding supports regarding infrastructure in University Building Projects. Both cases in this study also represent different resources. A project of GKU (Project 1) emerges from the National Budget Allocation (*APBN*), meanwhile the SKW projects (Project 2) are supported by Corporate Social Responsibilities (CSR) programme from one of national oil and gas companies. Nevertheless, the university building project must comply with the same umbrella regulation of Construction Service by Act No.18/1999, Procurement Regulation by Presidential Decree No. 54/2010, and second Amendment Presidential Decree No.70/2012.

Projects of PRT and GKU buildings represent success and un-success story of University Building Projects. Based upon the previous faculty building records, we could learn how powerful an experience is in order to guarantee the project success. Nonetheless, it is also a criticism in the reality that experience records sometimes are manipulated by irresponsible parties. In fact, there are collusions existing on the building project levels; one of them is called 'Konco' system.

In the long run of public building projects done by Indonesian local authorities, there are challenges to deal with professionalism issues in practices. A term of '*Konco* System' (friendship system) also means 'friend-based collusion'. This system propensity is benefited by particular party and does not consider the project itself. In terms of project safety, budgeting mechanism which relates to work performance and compulsory competitive tendering (CCT). The experts seem to not take into account such collisions. Officially, an experienced practitioner "failed" when he or she is involved in the system of tendering. However, this friendship system have rules in almost all institutions as confirmed by respondents in procurement members.

> 'Almost all institutions do the same. It's because I have got a report from planner consultant, consultant of Construction Management or the contractors. If the vendor, they do not do it, because they are under the contractor. It always

still happens, no matter the eradication would do in what way. It [eradication] cannot do with the current systems. It [the system] must be tightened again. This problem is a challenge for Indonesia.' (UB02**)**

Nevertheless, the public building administrations and construction firms are responsible for doing "Friendship" system. Moreover, in some points, the local parliament members or the local leaders in particular agency also have contribution to do so. Mostly, the impact of "friendship system" significantly ignores the experience matter representing capability, in terms of skill and expertise toward project executions for instance, the performance of contractors, and the decision to provide a winner of tender, as illustrated by the process of procurement of university building cases.

The first indications of contractors' track records were reviewed in the qualification process. This case study compares the portfolio of Project 1 and Project 2. From Table 7.4., on the first three rows, WKP firm was leading in experience criteria based upon the years of establishment. In fact, they won the auction. Otherwise, KCT led with experience and also won project 2.

Table 7.4. Records of Experiences from the Best Three in Qualification Process

No	Project	Contractor's Name	Years established (year)	Total Buildings Project	Local Government Projects	Total on-going projects	City based
1	1	RPN	25	12	12	0	Surakarta
2	1*	TKU	13	6	3	0	Surabaya
3	1	WKP	37	11	11	6	Jakarta
4	2	DM	18	3	3	0	Semarang
5	2	JD	4	3	3	0	Jepara
6	2*	KCT	20	4	4	0	Semarang

*= means the tendering winner; Project 1 = GKU, Project 2= SKW; all data extracted by e-proc document under permission of Engineering Faculty, University X (anonymous)

The second indication was found in the selection process commencing decision of the winning contractor. The verification of contractor's portfolio is a critical process. Albeit, the tender committee accompanied by a rubric for grading points, considering in case of "lowest bidder" it is still debatable when it is compared to methodological works. In fact, the tender committee faced the conflicts under the psychological pressure whenever they found the evident that the bidder with lowest price has an excellent methodological work. Most of them were worried if the contractor's costs were proposed to "low ball" price which is cheaper than the marginal cost. However, this issue seems to disapprear after tender committee announced the winner. Therefore, the procurement committee was more or less favoured for being "safety player" in this respect. Even, the former dean of engineering faculty in this project case was in the same tones regarding disputes resolution of contractor (TKU).

> "Maybe the auction team was also less likely to take risks when making a winner decision. I'm not too experienced in the auction. In my opinion, the auction team should took the runner up as a winner if they felt less confident with auction nominee which on the first place. In fact, the auction team did not dare, they may want to be 'a safety player', no objections, and no complaints, and probably they did not want to be bothered." (UB 06, Local authority, Former Dean)

The indication on critical situation commencing on the decision making process to get a winner was highlighted in the interviewee from procurement unit of Project 1 (GKU). The tender committee confirmed that they were overwhelming in terms of winner selection during the assessment proces of tender participants. Based upon the portfolio of winning candidate, it seemed unqualified for GKU project. The committee attempted to compare the minimum qualification and experience of the candidate. However, the Committing Officer (PPK) argued that the candidate was still qualified for that project. In contrast, the procurement committee argued that the qualification of the winner had been identified from the early process of tender.

> "..... Since the beginning of the process, I was disagreeing with the tender winner; contractor TKU. I thought that there was an intervention from our office in this faculty. At that time I had argued in Committing Officer (PPK) that the

contractor did not meet the minimum qualifications of experience we wanted." (UB02)

Furthermore, the tender committee underlined the momentum of the re-bidding process happened in Project 2 (SKW building). In fact, that project was accomplished, although a little problem appeared the day after they announced the winner. The other bidder was protested by the issue of KCT owner status under arrest by other fraud cases. Nevertheless, the contractor (KCT) was proven clean and granted to continue their project (SKW project). Project 2 had been accomplished, although there were correction works in some items. In general, the building owners (Engineering Faculty) decided that KCT was more satisfied with Project 2 rather than TKU in Project 1.

The third indication was found through the project execution. The pinnacle of the performance was proven from building execution period. Unlike the PRT building, Project 1 (GKU) extremely influenced the whole performance of the University Building Project in engineering faculty. The GKU building project apparently committed to dispute resolution. Based on the performance record and sequence monitoring, the chronological event was figured out, as can be seen in Table 7.5.

Table 7.5. Chronological Event: Performance and Monitoring Record Project GKU commencement to the Court

	Date	Event
-	10 June 2010	: Contracting Project GKU
-	5 - 11 July 2010	: at week 5, Progress to date 1.583 (late - 4.507%)
-	12- 18 July 2010	: at week 6, Progress to date 3.182 (late - 6.388%
-	04 August 2010	: Admonition Letter I for TKU from Owner
-	30 August 2010	: Admonition Letter II for TKU from Owner
-	25 October 2010	: Admonition Letter III for TKU from Owner
-	25-31 November 2010	: at week 22, Progress to date 32.140 (late -70.740%)
-	21 December 2010	: End of Contracts, Progress to date 47,25 % (late -52,75%)
-	23 December 2010	: Termination Contract by Owner
-	27 December 2010	: Appointed Lawyer for Contractors (TKU)
-	28 December 2010	: Register and Court behalf on Contractors (TKU)
-	31 January 2011	: Appointed Lawyer for Owner
-	05 March 2011	: Appointed Lawyer for Supervision Consultant (GUR)
-	14 July 2011	: Submission of Conclusion (Argumentation) from Owner, Supervision Consultants and Contractors
-	28 July 2011	: Court Decision of State Court of Semarang No. 342/Pdt/G/2010/PN.Smg.

The productivity of contractors was also confirmed by former Dean of Engineering Faculty. The progress of construction was reported under the average on the schedule.

> " It seems also possible that the management was not so good. So I got involved, I invited the director, we held a meeting, show course meeting 1, 2, 3. But after all had been done, they were not so lights. If in a hurry, it means there was overtime work, but the progress only 3 percent in a week which should be 5.5 percent. So, a little choked once. What was admitted by the supervision consultant was also not implemented by the contractor. The suggestions that had been given were not done. " (UB05, Local authority, Former Dean)

The productivity performance of Project 1 (GKU) had been proven by supervision consultant, this case leads to be a dispute resolution. Roots of these conflicts among stakeholders could be identified by contract document and evident on the project sites.

In order to evaluate the performance work of Project 1 (GKU), it could follow the argument debates from the court process. Three parties were involved in these conflicts: local authorities, contractors, and supervision consultants. Since contractors were unsatisfied with the decision of termination contracts by the owner, they were arguing in defence of their belief of not guilty.

Based upon the replict statement of court decision, contractors argued in two perspectives, technical and administrative perspectives. By the technical perspective, contractors stated that there were objections throughout the following points:

1. Shifting foundation coordinates were implied to the execution project time.
2. Rainfall was another reason for construction delay.
3. Interrupted supply of ready mix material in relation with Merapi Mountain Eruption
4. Delay of Lift equipment incurred during the progress of installation into the buildings
5. Delay of materials delivered. Most of the materials under the recommendation of Committing Officer (PPK) were incurring the extra cost and time execution.

The other objections due to administrative things supported the owner's decision to sentence the 'blacklist' for two years into construction firms and their management. In addition, the owner decided to ask for 5 percent fine from the total contracts value, then followed with withdrawal of the financial guarantee of contract from bank.

The contractors believe that local authorities (owner) were maladjustment due to the construction process. Thus, the decision for contract termination at the end of the period was against the law. Moreover, the contractors were also arguing on the supervision consultant performance when they were in consideration to give information due to the contract addendum. Supervision consultant was apparently against the law as well.

In contrast, the owner has stated by their reluctance in such statements of contractors. The owner responded as in the following points:

1. Shifting foundation was allocated as an additional work. It means that item of work was still part of the contract and irrelevant to ask the addendum and arguing as a factor that caused delays.
2. Weather factors apparently did not make sense as delays factor. In fact, the other building projects around the Univeristy sites had not any problems as well as GKU project.
3. Volcano Eruption (Case of Mount Merapi) was irrelevant as a delay factor in delivering supplies of ready mix. The mountain was located far away from the building location, thus it did not make sense that the mount eruption interrupted materials supply.
4. With regards to the delay of lift equipment, it was purely as neglectful by the contractors. On the day when the equipment arrived, there was not the way for hoist for lift installation.

The project performance has been clarified that the contract termination under the consideration of progress was only reached by 47.25 percent until the end of the contract period. In fact, the owner was communicating prior the due date of contract in such delay, by three times admonition letters to contractors. It is arguably that contractors committed towards wanprestacy.

However, the supervision consultant argued in their capacity to ensure the time schedule was followed by contractors. All the progress report and adjusted time schedule had been proposed by the contractor itself, while supervision consultant just followed the rules on the work specification. Progress report had been granted once the item of work was installed on their appropriate position. In the case of lift installation, the materials were not accomplished as required by the project specification.

D. Results

In considering the dynamic capabilities performance, the project case has demonstrated two perspectives of strategic approach in governing public building projects. Once the competitive tendering was delivered through the appropriate manner, the dynamic capabilities aspect existed in the project task. In accordance with the

performance, life cycle based investigation could be figured out in such project tasks, which was overcome by following comparative studies.

Since procurement activities of public building require the competitive principle (LKPP 2010:11), gaining project success could be achieved through the sustainable resources and experiences as a foundation (Hall and Wolff 1999). As can be seen in Table 7.6., among two projects being studied (Project 1 and Project 2), it argues that the construction firm's capabilities were always reflected from experience and competencies along the project phases. Less experience was confirmed by project performance of GKU building case. Although in the qualification process it was apparently competitive, as found by procurement report that 21 contractors were involved in that process, in fact, since week 5, the progress to date was just 1.583 per cent or later - 4.507 per cent. That contractor's (TKU) progress performance decreased constantly during the rest of the contract period about 47.25 percent. In other words, the project was late 52.75 of 100 per cent.

Table 7.6. Comparative Case Characteristic of University Building Project

Project Characteristic	Project 1	Project 2
Project title	GKU	PRT
Specification building	5 Storey, RC building + Lift, Foundation RC Hollow	3 Storey, RC building + No Lift, Foundation Mini Pile
Completion Planning (days)	175	189
Project location (city)	Semarang	Semarang
BIDDING PROCESS		
Total bidder	7	9
Qualified bidder	7	8 (1 outbid)
Standard Allocated Price (Billion IDR)	15	6.38
Owner Estimate (OE) price (Billion IDR)	14.720166	6.38
Winner Bid price (%OE)	89.7	80.3
PROFILE BIDDER		
Company name	TKU	KCT
Age of company (year)	13	20
Another bidder's companyexperienced (year)	12 and 37	4 and 18
Office base (city)	Surabaya	Semarang
Ownership	Private firm	Private firm
Total owner (person)	2	2
Total management (person)	8	2
OTHERS INFORMATION		
Bidding process	Clear, No Rebidding	Rebidding
Execution in the field	Slow Progress	Progressive, minor correction
Performance at beginning	Slow Performance (progress %/month)	Progressive (progress %/month)
Performance at the end of contract	47.25 %	100%
Authorities feedback due to project performance	Unsatisfied	Satisfied

The factors affecting the two projects' performance (GKU and PRT buildings) were indicated by the project manager's attitudes in handling material supply and workers resources. Based on the court stated in chronological evidence, it was revealed that contractors lacked of performance, in terms of project management capability and insufficient sources of labourers, lack of cash flow and engineering or technical skills as quoting points in the court decisions by State Court. These five points are: (i)

inconsistent of time schedule and (ii) network planning, (iii) technical implementation was not resolving the problems; (iv) imbalance labourers supply and demand and (v) not performing a good progress. The details of decision of State Court of Semarang (2010: 22-23) as follows:

> "On 29 October 2010, contractor (TKU) submitted to us (as Supervision Consultant), such as: (1) Time schedule and (2) Network Planning.....which is a change from the previous schedule for the expeditious implementation. We directly provided suggestions and corrections on the date 30 October, 2010, in the form of a correction, in advance 10 days (after taking into account (3) the implementation of the technical sense). Throughout our consideration in regard the correction would be overdue in 21 December 2010, only the structure. If it can be 10 days or advanced, then, let alone the structure to be accomplished in 11 December 2010. Thus, the remaining 10 days could be used for finishing. Instead, faster after we gave recommendations for acceleration proposal, unfortunately they was just slow. (4) Manpower deployed was a maximum of 160 people / day, whereas to achieve the new schedule, it must be at least 500 people per day as our proposal was to completion of 10 days ahead. Furthermore, at the end of the time, on 21 December 2010, (5)their progress was just about 47.3% (late -52.3 percent or more than 50 per cent)"

Considering to the capability logic characteristic (Hall and Wolff 1999:1112) that evidence seemed far from outstanding sustainable resources at the critical moment. It had not any complementary function in supporting such performance. Moreover, there was not strategic approach by contractors, neither creative work nor competencies behind the management, and also had no reliable assets and experience at that moment.

7.3.3 Summary of Case Study 2

The case of University building project is reflection of dilemma at the special authority in managing public buildings. The power of local authority in University institution demonstrates the evidence of strategic approach to deal with two objectives: educational development and engineering practices. Two different roles enacted by this level of authority become a lesson learnt to formulating strategic approach in

hierarchical organisations. In one hand university organisation enacted as element of national organisation (ministry level), and the other hand must be enacted as provincial level at the project levels. The biggest challenge to overcome the dilemmatic situation relies on the separation role in the building procurement activities. Most of the hierarchical organisation embedded with local budgeting system which has rigidity and inflexible to reconfigure from the existing bureaucratic style. However, reconfiguring the separation roles between academic staffs and building project management at the generic faculty organisation levels are difficult to be implemented.

The two case studies: SKW and GKU projects adopted to contrast the successful and unsuccessful university building projects. The strategic approach emerges from the perspective of procurement activities in this authority. The experience of procurement unit to engage with contractors and end-users denotes a process learning to enrich the key stakeholders in terms of capabilities toward sustainable practices, especially in university building projects. These experiences have a distinctive character in bureaucratic organisation rather than other authorities like regency or city levels. The fundamental issues in university building project exist on the competitive environment. The local authorities is 'standing on two boats', whether enacted roles in education purposes under the ministry of research, technology and higher education (MRTHE) or professionally engaged with public building practices under the commitments by chartered body or building regulations. However, the university institution is still has an opportunities to overcome the dilemmatic roles by reinventing partnerships schemes with private sectors or new insight to encourage allowable independent funding for building projects.

7.4 A Case Building Investigation in Regency and City Level

7.4.1 Introduction of Project

Investigation on building projects in Central Java province was initially started by prosecutor's regular scrutiny in local authority performance. In regard to systematic impact of the corruption phenomena in state-public building projects, this case is committed by law enforcement endeavour (it refers to Act No. 18 in 1999, Indonesian Law of Construction Service), particularly in regency and city level.

The investigation combined both the engineering adjustment (laboratory and field test) and qualitative methods (in-depth interviews and document analysis). Regarding independence issues, the prosecutor provides collaboration with State Polytechnic of Semarang under the investigation project agreement. This project has been long running more than a decade since the post-reformation order in 1999. The building investigation activities are derived from accountability issues in public building management. The investigation activity focuses to advocate the building failure and defects.

The public building investigation has been conducted to 34 building projects in various types, such as public hospitals, bus terminal buildings, public school buildings, government office, banks, stadium, traditional market building, and district health unit (*Puskesmas*). This investigation project involves numerous stakeholders, for instance, police department, prosecutors agency, building contractors, design consultant and supervisor (building control), the project's owner or authorities, independent institutions (academia or professional practitioners in public buildings) and building occupants or end-users. Moreover, this case has also highlighted the involvement of parliament members in terms of influencing the process of building investigation. In other words, there are political decisions that become part of public building investigation at regency and city levels.

7.4.2 Chronology of Investigation on Building Projects

A. Programme Overview

Building's failures and defects causing issues such as roof structure collapse and leaking sewer pipe system after the handover are persistent problems in the public building projects in local authority over the last few decades. There seems to be no significant endeavour by the stakeholders to provide a solution to these problems, and leading to unsustainable practices. These problems cannot carry on, as the construction industry will face more stringent procedures and regulation, and more intense competitions at a national or an international level. Thus, it is important to minimise the long-term impact on and improve quality by identifying the common factors causing building failures and defects. It will also promote the feasibility of implementing sustainable public buildings in the Indonesian construction industry.

A study of 34 building projects in Central Java is presented with discussions on the nature of defects detected during construction. This research activity was initially performed during 1999-2011 in a collaboration between the Semarang Polytechnic State, and Department of Civil Engineering, Diponegoro University, Construction Service Development Board (*LPJK: Lembaga Pengembangan Jasa Konstruksi*) of Central Java province. In addition, the further study was undertaken in 2013 using a qualitative approach to gain in-depth understanding of the strategic approach in public building projects in regency and city level. This study is derived from building failure and construction failures or defects which extent to identify sustainable symptoms by the strategic approach through the project success case. Further, as the way to define a strategic approach, dynamic capability framework has been applied through the holistic process of investigation.

B. Profile and Case Context

B.1. Defining Building Failure and Defects

In principle, a good building should be able to protect the occupants from various weather conditions. Importantly, building elements, such as windows, pipeline (plumbing) and temperature-conditioning system should provide serviceability throughout the intended lifespan of the facilities. Further, the structure should ensure safety and be able to bear gravity loads, earthquake, and wind load (Ahzahar *et al.* 2011:250). The following sections define building failure and defects.

B.2. Building Failure

This research defines the building failures and defects in accordance with Act No. 18 year 1999 (Indonesian Law of Construction Service), Article 1, Part 6. It is stated that a building failure is defined as the malfunction of the building condition, partially or in the whole part and or it does not meet the contract's requirements of construction work after project hand over (PHO). In addition, Government Regulation (*Peraturan Pemerintah*) No. 29 year 2000, Article 4 defines that building failure is a malfunction of building condition, partially or in the whole part, in terms of technical aspect,

usefulness, safety and health and or general safety as a result of inappropriate manner (faults) by the contractor or consultant after Final Hand Over (FHO) of the construction project. It is clear that the building failure is focused, in terms of the period after FHO term time. In other words, the contractor or consultant should make sure their construction products have met technical specifications and been safely occupied after FHO. Regarding the range of insurance time to be occupied, the construction product as stated in Act No. 18 year 1999, Article 25, Part 2 should be maximum of 10 years or according to the life span of construction.

B.3. Defects

Construction failures or defects have numerous definitions. Defect is defined as imperfection, fault, blemish or deficiency (Ahzahar *et al.* 2011). These conditions can be affected by the lack of design, manufacturing process, or improper installation of materials by practitioners (architects, engineers, or contractors). The point is that defects will reduce the value, in term of quality of materials, time and cost. However, to proof building defects, it requires "the hiring and testimony" by an expert, such as an engineer or architect. The expert, who has extensive experience and is well trained, will be able to identify defects through assessment of the design, materials or workmanship (Ahzahar *et al.* 2011:250). Nevertheless, it is difficult to state in a simple way, and to define the accurate meanings of building defects. For instance, the imperfection condition of the construction would be able to be identified in order to provide the progress report for granting the contractor to withdraw the term-cash payment (Richardson 2001). However, different perceptions and expectation between contractors and the supervision consultant or building control exist on the ground. It is important to contact an attorney to find out exactly what is happening in the building, and needs to take care of it and to protect their rights. It is concluded that the proper regard should be given to the terms of the contract (Archifact 2013). This case study defines the defects given to the term time perspective that puts into account at any time from signing contracts to FHO. The term time of building failures and defects is illustrated in Figure 7.4.

There are four objectives of the project: economy (minimise cost), satisfaction of quality, meeting targeted and safety requirements. Unsuccessful performance of all objectives indicates a project failure. The building failure or construction failure exists following the long process of project life cycle that has been enacted by contractors, that is, the performance indicators are unachievable (Husen 2009). Moreover, Ahzahar *et al.* (2011: 251-252) point out eight factors that influence the building failure and defects: climate conditions, building location, material of construction, type of building and functional changes, building maintenance, design fault, corruption and lack of supervision.

Regarding sustainable construction in New Public Management (NPM), accountability is a crucial concern when the government is facing the barrier such as corruption issues. Local government as the result of decentralisation should encourage the promotion for accountability and reduce corruption in the government (Ostrom *et al.* 1993). However, dealing with sustainable practices within the context of this research, sustainable construction should describe the root causes from planning, design stage, and continue after the construction team has left the site project (Hill and Bowen 1997: 237)

Figure 7.4. Time term of building failure and defects within project life cycle (Developed from Act No. 18, 1999)

Regarding the profile of the project case being investigated, this study presents 34 public building projects, which are selected by prosecutor authority of Central Java province. Each project can represent a regency or city authority as a unit of analysis. The details of the case projects can be seen in Table 7.7.

Table 7.7. Profile of Building Investigation in Central Java

Entity	Information
Level of authorities	Regency or City
Planning Concept	Various depend on the building functions, in general • Simplicity and strength in material quality • Energy efficiency in standard lighting and easy maintenance • Major Functional for public infrastructure (office, bank, district health unit, housing, hospital)
Structure	• Various Storey Building, the material element of structure majority by Reinforce Concrete, Steel and Woods • Roof material from steel structure or wood structure and various kind materials for covering • Foundation, various depends on the load capacities
Environmental facility	Standard public building for public facilities
Construction cost	Various ranges between 266 million to 37.622 billion IDR include tax
Duration project	1996-2008
Tender System	Compulsory Competitive Tendering by qualification and open auction system (LPSE)

C. Case Description

Indonesia consists of several large islands separated by sea with diverse ethnic groups. Java, one of the islands, becomes the centre of government and almost 60 per cent inhabitants are living in this island. Central Java is located between two provinces, West Java and East Java, and this province consists of 35 local governments, which have an area of 3.25 million hectares (*jatengprov.go.id*), as described in Figure 7.5.

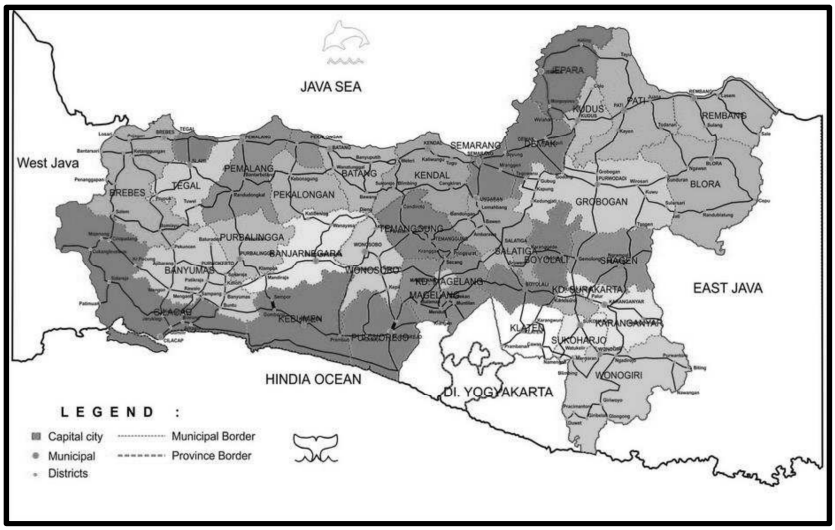


Figure 7.5. Map of Central Java (Location study of building investigation)

Between the year 2004 and 2010, the value of construction activities in Java in majority was around 60 per cent, if compared with other islands such as Sumatra, Sulawesi, Kalimantan, Nusa Tenggara, Maluku and Papua (BPS 2011). However, since reformation order, the construction gradually increases, especially when the enactment of the law of construction services Act No. 18/1999. Furthermore, in 2010 the construction value increases until fourteen times since the reformation order (BPS 2010). Between the year 2004 and 2012, Central Java province is one of the construction industry markets having stable economic growth. The economic growth of Central Java is relatively stable rather than DKI Jakarta Province or National level, around 5.0 to 6.25 per cent per annum (see Figure 7.6). During the global economy crisis in 2009, Central Java reached the top performance of economic growth in stable position of 5.14 above DKI Jakarta and even became leading in Indonesia.

Figure 7.6. Economic Growth of Central Java among National Growth and DKI Jakarta (Government of Republic Indonesia 2012)

Based upon the above condition, Central Java is categorised as the potential market for construction industry that has stable environment in terms of construction growth and local political situations rather than DKI Jakarta as a role model of Indonesia. As the big five market of Indonesian construction industry, Central Java has a significant contribution to national development, particularly in construction industry value. The construction value ranks third after DKI Jakarta and East Java province (see Figure 7.7.).

Figure 7.7. The value of construction by each provincial level in Indonesia (BPS 2011)

In regard to demonstrating the accountability of public building project in regency and city level, this case study presents an investigation of various types of building projects through the symptoms of unsustainable practices within building failures and defects. There are seven experienced investigators in public buildings that are involved in this study. These investigators are experienced in public building management, whether in the design stage, procurement, execution or supervision activities ranging from 15-25 years. The investigation also engages prosecutors, police department and local authorities at regency or city level

D. Results

Addressing building failures and defects has become a strategic issue for the development of Indonesian Construction Industry in this decade (LPJKD 2010, Hermawan et al. 2013). In the local building projects, building failures and defects are caused by various factors, notably the variations of contract value, element structures, and the lack of sound document management system. These factors and others that cause and provide a significant potential for improvement, building failure and defects are considered unsustainable practices. This study aims to identify unsustainable practices in building projects in local government using a case study method. The result indicates a significant deviation until 12.61 percent. Furthermore, the quality of structural elements such as the roof, foundation, utilities and finishing works frequently fell below predetermined standards. The factors influencing these unsustainable practices are namely attitudes towards the government, procurement system and budget limitations, lack of capacity in construction activities of local government, and violation of building control system.

The investigations are undertaken in 34 building projects based upon the various types of buildings and the different "project's grade". Historically, the buildings were established by three term-times order, before reformation Order (before 1999), transition-reformation order (1999 to 2003) and post-reformation order (2003 until 2013). However, the initial investigation was conducted by their own order, particularly the regulation references, such as building code or procurement regulations. A study of five building projects is expected to examine the pattern of sustainable practices. These five cases also represent the various building types, which significantly indicate the building failures or defects at regency or city level.

- **Procedure of building investigation**

The public building investigation is undertaken by field observation and document review of building projects of Indonesian local authorities that were constructed during 1996-2008. There are five stages regarding data collections: administration of data, field observation, building inventory survey, material sampling and field test, laboratory analysis, analysis and conclusions and reporting for each case study.

1. Administration of data

   Administration of data consists of a set of contract documents (design and shop drawings, contract value, amendments and related correspondences between client, contractor and supervision consultant, and other related documents), minute of meeting from appraisal process until FHO (Final Hand Over), a record and medium of communication between the client, contractor and supervising consultant during project execution and project performance reports.

2. Field observation

   Field observation is undertaken after investigation of administration of data. Pattern-matching method between data and reality on the construction product is preferably carried out in this stage. The initial findings are used to be evident by inventory survey (Quantity Survey).

3. Building inventory survey

   The inventory survey aims to evaluate and to ensure the tasks of contracting project meet the technical requirements which are provided by design drawing and technical specifications. This survey is attended by four parties: (i) attorney investigators as representative from local government (regency or city levels), (ii) independent investigators from academia (i.e. engineering institution or university); (iiii) contractors and, (iv) supervision consultant from related projects.

4. Material sampling and field test

   Material sampling is undertaken in regard to prove the quality of construction materials. The materials are important because they are used to determine the behaviour of construction activities (Ahzahar *et al.* 2011: 254). The sample of materials is selected in laboratory for further test. If the material from particular element is unable to be tested in the laboratory (i.e. avoiding disturbed sample or requirement of the law enforcement for independency factor), the investigation will conduct an Insitu-test. For instance, in regards to the needs of court evidence, the concrete material test for the constructed element of structural column and beam from existing building is conducted by hammer test at the

location of the building. Another field test like soil density is carried out by sand cone test, although other soil properties are still conducted in the material laboratory.

5. Laboratory analysis

   The samples of materials which are taken from field investigations are analysed due to the building standard of quality by laboratory testing. The result of the material test will be analysed and discussed by the investigation team.

As case study research method, the analysis has been conducted iteratively throughout process of data collection. Collected data are going to be examined by 34 case studies, and this study selected five case studies. The five cases represent the various kinds of building types which significantly indicate the building failures or defects.

- **Report of Building investigation**

The investigation is undertaken to 34 building projects from various types of buildings and various grades of construction firm, as can be seen in Table 7.8. Historically, the buildings were established by three-term time order, before reformation order (before 1999), transition-reformation order (1999 to 2003) and post-reformation order (2003 until now). However, the investigation was conducted by their own order, particularly the standard of references, such as building code or procurement regulations. A study of five building projects focuses on the symptoms of unsustainable practices to diagnose or evaluate the process in order to construct a strategic approach for public building management at regency or city authority's levels.

As determined in Table 7.8., it is shown that 12 of 34 investigations had failure or defects (Hermawan *et al.* 2013). These projects are located on nine different cities or regencies. Each of local authority has fewer amounts of certified building experts with various fields (Less than 500 experts), except the capital city of Semarang (about 3000 experts) and regency of Semarang (about 1000 experts). Moreover, there are less than 750 certified skilled labourers is. It is concluded that low quantities or capacities of the expertise and skilled labours significantly contribute the quality performance on the construction projects.

In fact, the 12 projects, which are identified as having building failure or defects, did not provide monthly reports, minute of meeting and direction book for communication between client, contractor and the supervision consultant (building control) during the project execution. The projects seem to have lack of supervision and be discontinued on the evaluation stages. Unavailability of accurate data results in decision-making and significantly increases the likelihood of construction failures. This means that the local government should be aware regarding sustainability performance and goals prior to the procurement arrangements in the future.

Table 7.8. Characteristic of buildings projects in Case Study Building Investigation *(*Hermawan *et al.* 2013)

No	Type of Building	Local authority	Date Construction	Date Investigation	% of OE	Type of Contract	Contract Value (in Millions IDR)	Deviation %	Grade of Project
1	Bus Terminal	Salatiga	1996	1999	>90%	Fixed Price	463	4.67	Grade 2
2	Bus Terminal	Salatiga	1996	1999	70-90%	Fixed Price	454	10.05	Grade 2
3	Bus Terminal	Salatiga	1997	1999	>90%	Fixed Price	443	0.00	Grade 2
4	Bus Terminal	Salatiga	1998	1999	>90%	Fixed Price	521	0.26	Grade 2
5	House of Representative/ Parliament	Grobogan	2002	2004	>90%	Fixed Price	5289	0.00	Grade 5
6	Bank	Rembang	2002	2006	>90%	Fixed Price	2198	0.00	Grade 4
7	Bank	Demak	2002	2006	>90%	Fixed Price	2033	0.00	Grade 4
8	Bank	Brebes	2002	2006	>90%	Fixed Price	2139	0.00	Grade 4

No	Type of Building	Local authority	Date Construction	Date Investigation	% of OE	Type of Contract	Contract Value (in Millions IDR)	Deviation %	Grade of Project
9	Bank	Boyolali	2002	2006	>90%	Fixed Price	1742	0.00	Grade 3
10	Bank	Batang	2002	2006	>90%	Fixed Price	3259	0.00	Grade 5
11	Bank	Kebumen	2002	2006	>90%	Fixed Price	3119	0.00	Grade 5
12	Bank	Magelang	2002	2006	>90%	Fixed Price	3999	0.00	Grade 5
13	Bank	Tegal	2002	2006	>90%	Fixed Price	3498	0.00	Grade 5
14	Public Facility * (A)	Semarang	2003	2006	70-90%	Fixed Price	1851	9.33	Grade 4
15	District Health Unit *(B)	Regency of Semarang	2004	2006	70-90%	Fixed Price	1179	7.80	Grade 2
16	Hospital	Kudus	2005	2007	>90%	Fixed Price	37622	0.23	Grade 5
17	Traditional	Semarang	2007	2007	70-90%	Fixed Price	1177	3.79	Grade 2

No	Type of Building	Local authority	Date Construction	Date Investigation	% of OE	Type of Contract	Contract Value (in Millions IDR)	Deviation %	Grade of Project
	Market *(C)								
18 *	Traditional Market	Demak	2007	2008	>90%	Unit Price	14009	6.93	Grade 5
19	Stadium	Temanggung	2008	2008	>90%	Fixed Price	393	0.00	Grade 2
20	School	Pemalang	2007	2009	>90%	Combined	1109	0.00	Grade 2
21	School	Pemalang	2007	2009	>90%	Combined	1109	0.00	Grade 2
22	School	Comal	2007	2009	>90%	Combined	1109	0.00	Grade 2
23	School	Ampel Gading	2007	2009	>90%	Combined	1110	0.00	Grade 2
24	School	Ulujami	2007	2009	>90%	Combined	1109	0.00	Grade 2
25	School	Randu Dongkal	2007	2009	>90%	Combined	1109	0.00	Grade 2
26	Public Facility	Blora	2007	2009	>90%	Fixed Price	266	1.98	Grade 1

No	Type of Building	Local authority	Date Construction	Date Investigation	% of OE	Type of Contract	Contract Value (in Millions IDR)	Deviation %	Grade of Project
27	Public Facility	Sukoharjo	2007	2009	>90%	Fixed Price	266	0.53	Grade 1
28	Public Facility	Banyumas	2007	2009	>90%	Fixed Price	266	0.00	Grade 1
29	Public Facility	Batang	2007	2009	>90%	Fixed Price	266	0.00	Grade 1
30	Public Facility	Grobogan	2007	2009	>90%	Fixed Price	266	0.00	Grade 1
31	School	Salatiga	2003	2009	>90%	Fixed Price	1000	0.00	Grade 2
32	School	Salatiga	2004	2009	>90%	Fixed Price	369	0.00	Grade 2
33	School * (F)	Regency of Magelang	2007	2009	70-90%	Fixed Price	901	12.61	Grade 2
34	District Health Unit * (G)	Batang	2008	2010	70-90%	Fixed Price	1355	4.58	Grade 2

Note: OE = Owner Estimated Price, IDR = Indonesian Currency (Rupiah), *(A,B,C, F and G) = sample project for focus study.

The further study regarding sustainable practices is conducted through selecting five projects (see Table 7.8, case project 14, 15, 17, 33 and 34). These buildings represent the various types of buildings as public facility, district health unit (*Puskesmas*) and public schools. A study of five buildings yields information as shown in Table 7.8. All projects are resulted from the procurement process by compulsory competitive tendering (CCT) with the price bidding around 70-80 percent of the owner price estimation (OE). Nevertheless, the deviations have occurred around 7-8 % on average. The building defects exist in the element of the building item of works. The highest rated failure is found at Structural element (11.91%). The second rated failure comes from roof element (4.68%), then foundation (0.66%), utility (0.48%) and finishing element (0.25%). Unsustainable practices have been depicted from these phenomena in the local government projects and justify the previous facts that there seems to be violation in the supervision of the building control system.

Table 7.9. Focus study on Five Building Projects (Hermawan *et al*., 2013)

Table 7.9. presents the symptoms of building failures and defects in local public building projects. The composition value on failures elements is constantly measured by local contractors, by reducing either volume or materials quality during the project

executions. However, based upon the investigation report among five cases from Table 7.9, only case project A (case 14) that has been brought to the court, where Project Manager and Contractors were sentenced guilty. The rest of building investigations is presented in Table 7.10.

Table 7.10. Resume of End of Cases by Triangulation with Building Investigators (2014)

Case	Type of Building	Local Authority	Date	Dispute	Court	Notes
1	Bus Terminal	Salatiga	1996		Yes	Head of Public Work Agency and Contractors were sentenced guilty
2	Bus Terminal	Salatiga	1996		Yes	Contractors were sentenced guilty
4	Bus Terminal	Salatiga	1998		Yes	Contractors were sentenced guilty
14	Public Facility * (A)	Semarang	2003		Yes	Project Manager and Contractors were sentenced guilty
15	District Health Unit *(B)	Regency of Semarang	2004	yes		Not proceed for further investigation
16	Hospital	Kudus	2005	yes		Cost was deducted from government budget because the project was constructed before Presidential Regulation (Keppres 80/2003)
17	Traditional Market *(C)	Semarang	2007	yes		Contractors deducted fine in small amount cost
18	Traditional Market	Demak	2007		Yes	executed by third party, resolved by political decisions through parliament members
26	Public Facility	Blora	2007	yes		not proceed for further investigation
27	Public Facility	Sukoharjo	2007	yes		not proceed for further investigation
33	School * (F)	Regency of Magelang	2007	yes		not proceed for further investigation, the attorney officer changed
34	District Health Unit * (G)	Batang	2008	yes		Contractor deducted fine in small amount cost

Note: Most of case that continued to the court was proofed in dealing with fraud and the buildings met the specification.*) samples in focus study (see Table 7.8).

Based upon the overall performance of building investigation (case study 3), the typical failures and defects are rooted from the lack of installation and reduced volume and quality of building materials. Nevertheless, above all indications of unsustainable practices, it is apparently similar with the problems in procurement. Furthermore, many factors behind the project success due to the impact of sustainable practices in public building are due to the performance and functionality (International Organisation for Standardisation (ISO 2008). In addition, within the functionality requirement of sustainable building, it is also mandatory to encourage an improvement of social-economy and local cultural aspects.

Based upon the discussion of the building investigation project, it can be concluded that the risk factors influencing project at regency or city levels focus on:

1. Risk of project failure

   There was a restrictive time that was induced to many construction projects. In facts, any public building project started around August to September due to cash flow of state budget. Naturally, this time is known as the beginning of wet season in Indonesia. It is a sign that some construction works were often delayed by the rainfall, and then so many working hours were lost at the moment. The replacement of working hours by overtime works provided another impacts, for example: fatigue of the worker imply the project productivity. This situation led to the decline of productivity of the workforce which was considered as an early symptom of building failure. In other words, the shorter project implementation time resulted in the greater risk of project failure.

2. Risk of budget and programme overrun

   Some cases found that contractors requested for an extension of time to complete the projects addendums, since they were not be able to complete the project on time according to the contract. The situation potentially allowed the contractors to do the work that was left behind. Nevertheless, there are consequences associated with increasing time, notably increasing direct and indirect costs..

3. Type of contract

   The types of contracts generally did not affect the time of completion of the projects. Most of the building failures have types of fixed price contract. This proves

that the service providers were not able to understand and apply the process of the implementation of the construction properly. This phenomenon becomes worse as service providers in place of the price bargaining were smaller or less than 70 per cent of Owner price Estimation (OE). Unstandardised contract may have indirect effects and probably can prolong the dispute resolution.

7.4.3 Summary of Case Study 3

Based on the results and discussion above, it was found that the poor quality of construction material is the most common factor that leads to building defects and failures. The sustainable construction in regencies and city levels gradually changes, based on the historical phenomena of the building investigation findings. In facts, around the period of 2003 until 2010, construction industry was being manageable, in terms of regulation and innovation methods. From the study of five building projects' investigation, it is indicated that the element of structure is rated the most important factor causing building failure or defects. At the project level, the contractors did not have a systematic monitoring approach to project progress, and did not produce proper documentation, such as progress reports, minutes of meeting (MEM), as a record and medium of communication between the client, contractor and supervising consultant during project execution. Further, there was not comprehensive approach to evaluation of buildability and quality of both the process and the product. Moreover, sustainable practices emerge from the motivation of the project organisation. Developing the sustainable practice needs a learning process, starting from questioning what the benefit for and who will be involved in the process.

Although the public building project's procurement has been setting up properly, it is contradictory with supervision records on five building projects that become the focus in this study. Project tendering seems to have a good arrangement and supervision entailed on the project life cycle. The future challenge is the capabilities to meet the projects successfully, whether the building failure and defects could be identified on the projects earlier or not. However, we considerthat building project differs in the nature of works and the efforts to accommodate the heterogeneity in the Indonesian's national culture as the context of project organisation. A strategy in response to the environment

is needed to fuse together the sustainable practices by the government, contractors, engineers, and stakeholders.

7.5 Summary

This chapter presents the analysis and discussion of three case studies of public building management at different levels of local authority. The unit of analysis uses the case study level that represents different levels of local authority. The analysis is presented by thick description approach, which discusses the project introduction, chronology of the cases, and summary of case study. The introduction of the project presents the background of the project. The chronology of case study presents the specific problems of the project and the interaction among key stakeholders during the project life cycle.

Case study 1 represents a successful revitalisation project in the province level; Case study 2 represents the university building projects at the special authority, and; Case study 3 discusses the building failures and defects from the public building investigation at regency and city levels. The analysis of case studies demonstrates the strategies and tactics or the strategic approach by each project's stakeholder in terms of how to achieve project success. The strategic approach is a manifestation of capabilities of public building stakeholders to reconfigure the use of resources in the rapid changes of local political climates.

CHAPTER 8 Application Framework and Interaction Model LACU

8.1 Introduction

The application of dynamic capabilities framework is undertaken through semi-structured interviews to address the holistic perspective of public building performance. The template analysis (Template 2) from Chapter 6 (see section 6.2.2) will guide to identify the strategic approach through each aspect of the dynamic capability framework: managerial and organisational process, asset positions, and path dependencies (Teece, Pisano and Shuen 1997). Exemplary quotations were selected from a respondent based upon the aspects of dynamic capabilities framework. There might be some aspects that were not mentioned by the interviewees, and thus there would be gaps. However, it could be addressed by transcripts of interview with another respondent (a cross case study). However, the gap possibly exists due to incomplete information that has been obtained from the fieldwork. Once the comparative study is explained, it also describes the behavioural pattern of local authority levels, whether organisational context or sustainable practices on strategic approach. Case of Revitalisation Traditional Market (case study 1) represents the provincial level, meanwhile the case of University Building (case study 2) represents a special authorities level and case Building Investigation (case study 3) represents regency or city level.

As Teece and Pisano (1994:541) argued, "Strategic dimension of the firm is: its managerial and organisational process, its present position and the paths available to it''. In other words, we could identify how managerial and organisational processes in a particular position within market circumstances, and how the previous paths influence the response to dynamical changes of markets through their strategic approach. This research presents a comparative study to depict the holistic perspectives of strategic approach in public building projects. Based upon the results and analysis of interviews with regard to the strategic approach (as presented in Table 6.1), the application of dynamic capabilities is discussed in section 8.2.

8.2 Managerial and Organisational Process

8.2.1 Coordination/ Integration

Based on the organisational perspective in the construction industry, Shirazi *et al*. (1996) found that delegation was favoured in decentralisation authorities in complex environments. Similarly, in public building projects, in terms of the reliability of project organisation when facing the highly-perceived uncertainty, a project manager should consider the internal resources coordination.

There are various types of managerial aspects in public building projects, which are obtained from the local capacity. However, pricing system is supposed to be considered by contractors and local authorities to deal with building construction project. Thus, the effective and efficient aspect would be realistic to achieve the internal coordination or integrations (Teece and Pisano 1994, Aoki 1990).

Regarding the revitalisation of Traditional Market in Jakarta, contractors were really concerned with efficiency of organisation staffing. The simple organisation implies to the efficiency of spending budget and team coordination on the ground. Consequently, experience and competency of human resources become a consideration by senior management. Notably, staffing organisation is considered from their portfolio performance. Mostly, the middle management level is experienced in high-rise building projects and in other infrastructure projects. This is confirmed by Project Manager (TM01) and Site Engineer

> *"*Honestly, as a provider of market building construction project, I think that we do not need a lot of personnel but effective organisation." (TM01, Contractor, Project Manager)
>
> "When I joined this [contractor], they trimmed it all; the number of employees is 10 or 11. Now warehouse is concurrently, surveyors as well. In a large company, the surveyors and site engineer are separated."
>
> (TM02, Contractor, Site Engineer)

In fact, their organisation was built with egalitarian organisational approach. During the field observation, that phenomenon can capture how the daily communication delivers the major task of the project. Hierarchy which is modest is dominant to deliver

the task force, although 'trust' among project team work and 'control function' of contractor's management exist on daily basis (Field Note July 2013).

Similarly, in Case Study 1, Investigator Team in Case Study 3 (Building Investigation Projects in Central Java) also implementing egalitarian style in their operational management. Meanwhile, Case Study 2 has a different approach in such a coordination style. University Building Project has a distinctive style in terms of environment. There is a traditional approach, just like Bureaucratic style. For instance, establishing a team work, whether in procurement unit or in generic function like technical team or tender team is done by delegating the top management of the local authority. However, at project level in Case Study 3, it still demands the political approach, as stated by coordinator of building investigators:

> "The local government has two functions. First, as a local authority that is influenced by electorate, and as an executive who manages project budget, they should be able to accommodate some interests that have higher power." (BI02, Local authority, Construction Management)

8.2.2 Learning process

Since the dynamic capability requires the learning process to reconfigure the internal resources to gain competitive advantage, the echo of learning process is emergent from the case studies. Construction firms in KGM projects stated that they have learnt many aspects during the process of the revitalisation market project. The contractors have been learning similar case of revitalisation from two references of market building projects: KD market and PM market (anonym), as confirmed by project managers and the site engineer. The learning points are adopted from organisational perspectives, whether internal or external aspects. Through internal aspects, contractors consider staffing management, strategy of preparing a business plan and marketing approach. Meanwhile, the external aspects are commonly to respond to the tension of local authorities and market end-users.

The individual experience of project staff is reflected from internal organisation capability. However, project manager emphasizes that Traditional Market building

needs special consideration, whether by engineering experience or strong motivation to do so. Based on the previous experience in PM and KD market, contractors have learnt to engage what the most significant aspect is. The most consideration refers to the market traders. The market trader is the heart of the project. As illustrated by Case Study 1, the engagement between contractors and market traders or market traders with local authority was emphasized in most stages of revitalisation, especially on the selection of contractor and design approval.

The other internal aspect that becomes a consideration in KGM is the communication factor among contractors, authorities and market traders. In fact, authority (*PD Pasar Jaya*) disagreed with the previous contractors due to communication problems. The market traders confirmed that the real problem of the approval to appointing the contractors is determined by the price offered by developers (reliability price of market stalls).

> "The process is through several developers. …Finally, up to three times failed, but the now developers are fixed in price that we want, they agreed, then approved by *PD Pasar Jaya*." (TM06,AUB, End-users, Market trader/Merchant)

Typology of market traders and location of the existing market building would be an external aspect in governing revitalisation of KGM project. In this research, typology refers to the holistic phenomena of the market traders in the similar project from local authority (PD Pasar Jaya). Contractors of KGM project identify that "alive market" phenomenon is one of indicators to project success. Alive market has three dimensions as sustainable pillars, social-economy and environment. The term 'alive' means that economical transactions exist in stable social communities (in this case, community of urban population). A good market is often followed by a good environment, whether it is a secure place to shopping, quality product displayed by the market traders, and the cleanliness and good waste management. The strategic location becomes a significant consideration. Recalling "the Location Theory" of Alonso (1964), enhancing economy value could be achieved from urban development area. That urban area as defined by Alonso, would require a transportation system as the important feature of network

connection. Especially, in this revitalisation of Traditional Market in Jakarta, the influencing factors of "alive market" are slightly different from Alonso's theory. The density of economy infrastructure (i.e. traditional market) and side effects from street vendors or other modern retail market have been considered on the feasibility of business plan. Based on the urban development plan, the market location should follow the land use and be located in appropriate zoning (urban planning document for KGM 2004).

The distinctive performance of contractors exists on the competitive price for market traders. The contractors are learning from the previous revitalisation projects that affordability to buy market stalls is the key success of project marketing. The learning process of Case Study 1 also has a similarity to another cases (Case 2 and 3), although the university building (Case 2) and building investigation (Case 3) have been learning to develop a mechanism of procurement that still becomes problems in regency and city level. In addition, learning aspect is quite distinct in terms of the strategic approach for enhancing sustainable practices among different levels of local authorities. Nevertheless, efficiency and end-users oriented can be achieved only when local authority separates their role between policy maker and public service delivery

8.2.3 Reconfiguration and Transformation

In resonance of the value creation in capabilities view, there is a need to reconfigure organisational structure and to adapt to the dynamic environment either by internal or external transformation (Amit and Schoemaker 1993; Langlois 1994 cited in Teece, Pisano and Shuen 1997). Teece and Pisano (1994) argued that the capacity to enable the reconfiguration and transformation should be learned through repetitive behavioural changes, because more practices mean accomplishing more capability. Dynamic changes will affect operational cost, so the project organisation must "minimise the payoff change" (Teece and Pisano 1994:545). The skills to scan the environmental conditions would be a trigger to the abilities in adapting the particular requirement. The reconfiguration and transformation in complex situation in public building projects can be achieved by delegating tasks (Shirazi *et al*. 1996).

The reconfiguration of organisational structure was happening in the contractor of

KGM project. Turning to a new business orientation from "Earth Anchor Application Provider" in 2005 (Portfolio of contractors, accessed 2013) to become Building Construction Firm has become a trend in particular specialist of Traditional Market projects. Project director of MBS stated that radical changes are considered due to main reasons of market demand and opportunities for entry in such business. The individual experience in managing building project and risk opportunities exist as the backgrounds of this transformation process. Risk taking ability would be predominant in the early stage of organisational changes. It is indicated through contractor's distinctive performance in Revitalisation Traditional Market Project. This is as confirmed by the Project Manager in the following statements.

> "The fact is at the beginning of the company's establishment, we did not intend to take this KGM project but Anchor infrastructure projects. … Based on our experience, we think it is easy, it would be easier for us to observe. What if this market project offered for an inexperienced one, they would be difficult to sort out, which market is good or bad". (TM01, Contractor, Project Manager)

In fact, the representative of market trader also reaffirmed the project manager's statement. Within the occasion of informal discussion with local authorities, staffs, and contractors, they agreed that they were satisfied with MBS performance and it is mentioned as the first successful project for Revitalisation Market Projects in Jakarta.

Contrary to Case Study 2 (University Building Project), the institution of university still follows the hierarchical structure as well as the state organisational tasks. The financial management of university in Case Study 2 applies centralistic coordination by higher authority in ministry level. In addition, the dualism role in educational sector and construction industry in practices are quite obvious and also emphasize the obstacles, enacted in main task of either education or professional organisation in construction industry. The obstacles are still around "double roles" or "standing on two boats", as confirmed by technical team in procurement unit:

> "We know that FT (Engineering Faculty) is engaged in education, and then to deal with the specific matter about the projects, especially in this building matter, it seems not focused… Not separated inside it, but do not exploit people who (already) have 'double duties'.."

Nevertheless, there are changes which are emerging from the current situations. Across the Provincial Agency (Under the Governor Authorities) for Public Building joined the new system of building assessment. Since 2013, this reformation of bureaucracy has been highlighted by the member of technical team in Engineering Faculty.

Time management and individual worthiness would be compulsory problems to configure managerial and organisational process in procurement unit.

> "It is true that lecturers have many experiences of their expertise. So, they can be involved in the technical team. Nevertheless, the fundamental problem is a matter of time and salary. There is no decent standard honorarium, but the workload in a short time limit becomes a dilemma for lecturers who are involved." (UB07, technical team)

There are suggestions emerging from the technical team member about alternatives to reconfigure the organisational structure and management to overcome the dualism as mentioned before. First, they should appoint certain staff in a unit that is handling infrastructure problems, both the project building and administrative task. Second, another strategy is about separation task of Procurement Unit.

It is also necessary to distinguish between the procurement of goods and procurement of construction. The reasons that are addressed are also very different. The procurement activities and electronic equipment have been a routine, meanwhile the construction project is in the short-time period and complex activities. Unfortunately, there is not any reference of regulation facilitating this situation except the Presidential Decree No. 54/2010 and No.70/2012. Although the detailed guidance in University authorities stands on the two directions, according to the Ministry of Finance and Ministry of National Education and Culture, it needs a reformation through the radical changes in the higher level of authority, at least at the national level.

Unlike the building investigation which is committed with hierarchical management in governing public building projects where incompetency and incapability appear in practices, the fundamental obstacles of local authorities in governing building project management are still around the state budgeting mechanism and lack of control by corresponding agency. Insignificantly, the reformation of bureaucracy in construction sector since 1999 seems to be political 'lips service'. As indicated by 12 of 34 cases of building investigation committed to fraud, 7 cases were categorised in dispute resolution; the rest of cases (five cases) proceeded to the court. The cases that were involved in disputes are typically small cost projects and had not proceeded for further investigation. Only case 18 of the building investigation was resolved by political decisions through parliament member, although the impacts of solution benefited the public sector (Traditional Market building). The detailed indications are listed in Table 8.1.

Table 8.1. Cases of Building Investigation by Fraud Indications

Case	Type of Building	Authorities	Construction Date	Dispute resolution	Going to Court	Note
1	Bus Terminal	Salatiga	1996		yes	Head of Public Work Agency and Contractors were sentenced guilty by court
2	Bus Terminal	Salatiga	1996		yes	Contractors were sentenced guilty by court
4	Bus Terminal	Salatiga	1998		yes	Contractors were sentenced guilty by court
14	Public Facility * (A)	Semarang	2003		yes	Project Manager and Contractors were sentenced guilty
15	District Health Unit *(B)	Kabupaten Semarang	2004	yes		Did not proceed for further investigation
16	Hospital	Kudus	2005	yes		Deducted from government budget because the project was constructed before Presidential Regulation 80/2003 (Keppres 80/2003)

Case	Type of Building	Authorities	Construction Date	Dispute resolution	Going to Court	Note
17	Traditional Market *(C)	Semarang	2007	yes		Contractor deducted fine in small amount cost
*18	Traditional Market	Demak	2007		yes	Executed by third parties, resolved by political decisions through parliament member
26	Public Facility	Blora	2007	yes		Did not proceed for further investigation
27	Public Facility	Sukoharjo	2007	yes		Did not proceed for further investigation
33	School * (F)	Kabupaten Magelang	2007	yes		Did not proceed for further investigation, the attorney officer changed
34	District Health Unit * (G)	Batang	2008	yes		Contractor deducted fine in small amount cost

Recently, the local authorities as regulator can impose target on the project performance, instead of enforcing role to project organisation.

> "The local authorities as regulator will impose indirectly to the public building projects by enforcement roles throughout regulations. Regulation support apparently has influences in public building activities. Certainty, some projects apparently are also influenced by local leaders. It is arguably that every single amendment will impose to the project investment. "(BI06, Local authority, building investigator, project management)

Nevertheless, in some authorities, a local leader has greater influence on the people, even at the grassroots level. For instance, a local leader from Boyolali regency conducted scrutiny personally among his staff, as confirmed by Building Investigator.

"Yes, at Boyolali regency. The mayor (regent) was involved in intensive monitoring by cycling as his hobby while looking at the building projects. If he found building performance does not suit the expectation, thus he will provide input to head of department or their agency. "(BI06, Local authority, building investigator, project management)

8.3 Asset Positions

8.3.1 Technology assets

The technological assets are originally from collaboration among sub-contractors either sub-contractor of structure (precast technology) and Mechanical-Electrical (ME) sub-contractor. However, technological assets often become obstacles for small contractors to manage the project success, in terms of time of efficiency and reducing operational cost, as illustrated in Case Studies 2 and 3. Even, experienced practitioners would not guarantee that the project will survive in the competition in local authority regarding technological resources by small and medium contractor firms. Furthermore, it turns to the auction rules where the project value should take into account the complexity of building project.

In line with the statement of the building investigation's coordinator, if the value of the project is too small, experience list based upon the procurement portfolio not always guarantee the quality of works.

"Although he is experienced, if the value of the project is too small, it makes no difference to the success of project. Related to auction rules, the winning bidder has been selected from the lower price. So if the bidder wins tender with lower price, even though has many experiences and experts, this factor will not affect the building's quality." (BI02).

In facts, most of buildings during the investigation of building failure and defects (Case Study 3) confirmed that a project which has excellent performance is always completed with proper technological supports, experienced engineers and is competitive in value. In addition, these performances are followed with outstanding financial support during the sequence project.

8.3.2 Complementary assets

Construction project is an assembly process of various resources which have uniqueness one to another. The three case studies demonstrated different approaches in the way which was complementary to the project activities. In case study one, the Traditional Market project utilised the complementary tasks function among team works based upon the individual experience which has a range of skills as a manifestation of effective organisation. At the managerial level, the project manager and operational manager also enacted different function in terms of internal or external impact. The effective communication was run through effective organisation in the delivery of significant tasks to gain project success. In other words, the strategic approach institutionalises the project teamwork in the most efficient way.

Contrary to the Case Studies 2 and 3 that have hierarchical environment in governing public building projects, rigidity of state budgetary process requires a space to separate role of authority staffs in terms of procurement activities. Sometimes, emerging decision of the local authorities conflicts with the interests of efficiency matters of public organisation and code of conduct of the project institution, either individual as practitioners or as public administration roles. Nevertheless, in light of complementary assets, different levels of authority are considered by the local institution. On one hand, separation role is a strategic approach in particular institutions, on the other hand project organisational structure establishes boundary as a social process.

8.3.3 Financial assets

Financial assets in public building project are fundamental to deliver various construction activities from different resources, which can be generated by innovation and collaboration among multi parties. Innovation in the construction industry is required when the project institution is unable to create sufficient financial supports. For instance, the annual budgetary in local authorities is very often changed by the parliament decision due to the priority of projects by each authority.

> "The procurement activities have clear/obvious activity forms, but for the building, sometimes there has been no budgeting portion yet. This was not

though from the beginning then the budget is given and time is limited. It is very unsuccessful; they will be overly dependent on the technical team. The Project is only administrative, not technical anymore. ” (UB07, Technical Team Member)

It does not matter how excellent the building design and procurement process is delivered. Furthermore, profitability still favours as business attractiveness to business construction. In addition, if the budgetary aspect is reduced by political decisions at an authority level, there is a need for financial assets to endure the project performance afterward. Hence, financial assets at different levels of authority could be identified by different approaches as presented in Table 8.2.

Table 8.2. Financial assets at different levels of local authority

Province Level	Special Authority level	Regency or city level
Sufficient capital for running the project execution by private sector engagement and organisational approach from bottom-up to reduce the overhead cost	• Innovation of local leader • Collaboration with investors or other institutions	Implementing a competitive price which reificates in standard wages of engineers and prices of construction value

8.3.4 Reputation assets

Reputation assets refer to organisational characters as well as identity, where the product and management become the most important factors (Albert and Whetten, 1985; Brickson 2007, Dollinger *et al.* 1997). Reputation can promote a strategic role, and also can become intangible assets (Davies *et al.* 2010). This research has identified some reputation assets which are provided by each level of local authority.

At province level (Case Study 1), reputation assets of contractor firms are established from the previous experience of individual manager in revitalisation project (i.e. KD project and PM project), in terms of skills and capability to handle the teamwork and typical problems in the similar case (revitalising Traditional Market). However, the other cases (Case 2 and 3) rely on the portfolio document of contractors by the procurement process prior to the project execution. Most of reputation asset is

identified from the track record of project firms in the latest three years and then is supported with the bank statement or bank guarantee to replace the financial performance. Unsurprisingly, the management reputation is less considered by the local authority in almost all project cases, particularly in university authority, regency or city level.

The reputational asset seems to have lack of evidence in the process of validation at every level of local authority. The process to proof the reputational assets takes time because of some reasons. First, contractor firms' portfolio is derived from multi stakeholders where the communication and networking skills are required in this respect. However, procurement process is conducted in a very short-period and demanded to be accomplished by each authority within budgetary period. Second, the Indonesian construction industry does not have a centralised information regarding reputation of contractors. Thus, the decision making to select the contracting company is regardless the objective of reputational assets at the moment. Therefore, some authorities have their own strategic approach to identify how reputable the contractor is based upon empirical works as presented in Table 8.3.

Table 8.3. Identification of reputational assets at different levels of local authority

Province Level	Special Authority level	Regency or city level
-Identifying and tracing the performance of track-record based on employer recommendation and product performance (i.e. Local authority database of contractors' portfolio) -Developing integrated IT system for historical performance of works among different level of authorities (central and local levels)	- Implementing pre-requisite on the procurement by minimum three months of bank statement prior to the auction date	- Minimising the deviation between estimation, building value and contractor prices - The assessment on viability of standard price and profit margin in order to stimulate the motivation of building practitioners

8.3.5 Structural assets

Structural assets refer to 'How organisational staffing is' and 'conducting the rules'. Structural assets in the case of revitalisation of traditional market in Jakarta are based upon the simplification on the structure and efficient coordination. The structural assets in Case Study 1 appear as a collaborative structure among experts, specialist contractors, and experienced management team. However, in Case Study 2, structural assets are embedded in the hierarchical organisation of university institution. In university authority, structuring the staffs into different tasks (administrative and technical matter) does not clearly appear during the project life cycle. Moreover, at the regency or city level, the structural assets are likely different for other authority (Case 1 and 2). Contractor firms at regency and city levels identified that structural assets are growing by the local market segmentation and almost all projects depend on the scale of capital investment.

8.3.6 Market assets

Specific assets become basic needs after the managerial and organisational process is fulfilled. The market assets become a reason and a hope in such expectation of company owners that a business is reliable and profitable. Underlining the consideration of a strategic decision is to gain competitive advantage, dynamic capabilities approach utilises the firm's assets as competitive factors.

The reputations and market position would be peculiar assets for contractors in revitalisation of Traditional Market in Jakarta. The individual experience of the management team is outstanding in several cases of projects, including the site engineer's experience in high-rise building projects. PD Pasar Jaya as the local authority puts their trust to contractor firms due to the portfolio with the similar experience of revitalisation of market project (i.e. PM market and KD market, anonymous). The market position is determined from their experience to reconfigure their resources under the strategic approach in creating competitive price of market stalls.

> "KG market only costs 8.5 million IDR (Rupiah) per square meter. While the market stalls of Koja could reach around 15 million IDR per square meter, and

our stall at KGM project is only 10.5 million IDR per square meter" (TM01, Contractor, Project Manager)

At Case Study 2, the market assets are obtained by the annual student body and other *civitas academia* (i.e. academic staffs, administration staffs and another employee, which support the building maintenance). The activity of educational service determines the quality improvement of the local facility and mostly by the adequate buildings. However, unlike in the Case Study 3 of building investigation that market assets have been provided by local manpower or employability, various resources in construction materials and local culture have been growing up.

8.4 Path Dependencies

Path dependencies refer to "historical matter" or organisational "track record" by previous process learning (Teece and Pisano 1994:547, Teece, Pisano and Shuen 1997). Learning is recognised as a process to refine the routines or trial and error which is followed with evaluation from particular feedback. In addition, the most important part of path dependencies is the greater impact to the product. Teece, Pisano and Shuen (1997:523) argued that path dependencies exist on the "demand-side phenomena".

The nature of public building project activities requires portfolio submission for qualification assessment. The portfolio of contractor firms should be a manifestation of previous experience, which is embedded in a procurement document submission. Through the document of building project investigation, we found in case study of revitalisation of Traditional Market in Jakarta, some evidence which point out that contractors have transformed from earth anchor application service provider to become a general contractor for public building projects. Another evidence was found that the current project manager was involved in the revitalisation project of KD Market.

Regarding the contractor's capabilities, the supplier networking and abilities to handle the revitalisation Traditional Market are also captured in the portfolio analysis. For instance, they thought about efficiency by using sub-contractor of the pre-cast material as a consideration of timetable and operational risks. The contractor has learned from previous projects (KD and PM market) that delays in the main structure of

market buildings are crucial issues and affect the whole cost of construction, as confirmed by sub-contractor in a separate interview.

> "The parameter is floor to floor speed. Conventional methods are around 6-7 days but we make it 2-3 days faster, though it depends on the lifting plate, it is around 2-5 days floor to floor and it is possible to run faster in the field. …. We can follow the design what architect wants [design]" (TM05, Sub contractor pre-cast of KGM project)

In Case Study 2, we could identify that path dependencies are just little echoes of the project performance. Contrary to the performance of two projects (GKU and PRT projects), it is pointed out that experience does not guarantee to a better product yielded. The problems are still around the budgetary performance-based, as typical of bureaucratic approach in local authority. Since the failure case of GKU project in 2010, local authorities have been developing the procurement rules, especially for TOR (Terms of Reference) or procurement in brief. Project institutional improvement by trial-error, getting feedback from the stakeholder and project evaluation, seems not firm enough in this organisational perspective, whether by authorities or contractor's perspective.

In Case Study 3, the role of local authority is still dominant in terms of control functions due to the project performance. Building investigation has been influenced by reformation of bureaucracy at different levels of authorities. It seems to be the learning process by authorities, contractors, and public as the end-users. Fortunately, the learning process through the building investigation has a significant impact to figure out the pattern of sustainable practices in public building construction. Among the long run of reformation order, accountability of public building is just more about the state budgeting balance sheet or absorption of allocated budget. This perspective also pulls out the learning point that limits the local authorities staff as a crucial issue for accountability practices.

The imbalanced tasks of local authority with budgetary allocation in operational cost would be the hampering factors to encourage the stakeholders to have better performance, whether throughout their routine, the strategic planning, a procurement

arrangement and building control system in practices, as confirmed by a geotechnical engineer.

> "This thought appears as the component of unallocated cost. Consequently, when they ask the commitment making of officials to help manage the project drawing authorisation process to Housing and Spatial Planning agency (*Dinas Kimtaru: Pemukiman dan Tata Ruang*), the spending cost was more than the standard as it was not allocated initially". (BI07, Geotechnical Engineer)

8.5 Developed Framework of Sustainable Dynamic Capabilities and Interaction Model LACU for Public Building Projects

8.5.1 Developed Framework of Sustainable Dynamic Capability in Public Building Project

In regard fitting-up the evidence at the project level, this research attempts to address the research aims by exploring a strategic approach to enhancing sustainable practices in public building project. Thus, this developed the framework from the empirical data which obtained by semi structured interviews and archival survey. The framework of sustainable-dynamic capabilities (FSDC) is developed as a novel empirically-based guidance for the local authorities to undertake sustainable public building management throughout project life cycle. This developed framework is influenced by the dynamic capabilities theory which taken by the context of public building project in local authorities.

Initial conceptual framework has been discussed in Chapter 4, and was applied to the case studies. The developed framework was established through an analysis of interviews, project documents, and field observations. Based upon the template analysis (see Chapter 6), the thematic coding of interviews, including the template or emerging code by the new topic among transcripts and the initial framework dynamic capability, was subsequently developed. The framework was constructed by capturing the thematic codes, which have emerged in qualitative analysis. Thus, a flowchart depicting the relationship amongst factors applied to the initial framework is presented in Figure 8.1.

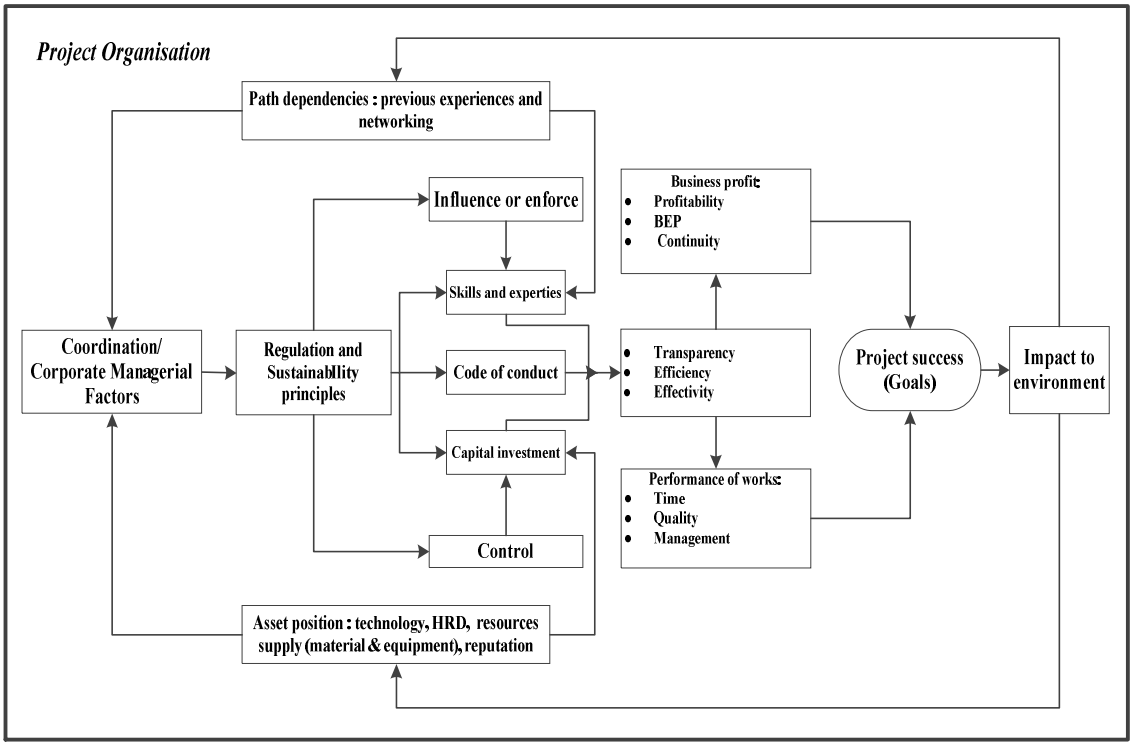


Figure 8.1. Framework of Sustainable Dynamic Capabilities (FSDC) of Public Building Projects Managed by Local authorities

In Figure 8.1., the concept of dynamic capabilities immerses with sustainability principles through the mechanism to achieve project success. The building practitioners and local authorities should follow procedures of public building projects in compliance with the building regulation from the beginning to the commissioning stage. The resonance of sustainable practice is represented by economical aspects (Performance of works and Business Profits) and social-environment (impact to the environment). In regard to the local authorities' roles, this framework accommodates the role of "influence" or "enforce" and control function. Meanwhile, the regulation is conveyed through code of conduct in public building practices. In addition, the contractor's role exists on the two dominant factors, skills and expertise and capital investment.

Responding to the sustainable practices, the mechanism of sustainable public building projects should be achieved by three principles of accountability: transparency, efficiency and effectiveness. However, the ultimate goal of the sustainable-dynamic

capability should take the basic need of business profits and performance of building products, into consideration. Sustainable provision is derived from 'eco-friendly' spirits but it acquires a proper consideration of minimum quality performance. Sustainable practice means the long-term impact but tradeable, realistic and affordable for public building stakeholders.

To justify the developed framework, the researcher looks back to key respondents in each case study. Through the two inquiries: (1) Is the framework (FSDC) suitable for current practice of local public buildings? And (2) How is the ideal approach to gain sustainable practice at public building project? It has been demonstrated how the logical framework makes sense in practice and which strategic approach should be developed.

Based upon the discussion about the developed framework (see Figure 7.9.) with key respondents, several feedbacks are pointed out as follows:

- First, the logic of framework makes sense if compared with the reality of public building practices. However, in terms of feasibility aspect, the small contractors, which have been granted a low cost project lack performance. The contractors will survive with low cost budgetary project as long as they have sufficient capital investment.
- Second, the most successful projects were achieved with the adoption of more sustainable practices. Support from regulation and local authorities staff engaged in function of building control becomes a significant impact in the whole performance.
- Third, in regard to the compliance of the code of conduct, this is related to commitment. However, low cost budget of the public building project will obstruct the stakeholders' engagement along the project activities. Low cost budget was set up systematically from initial stage of procurement. Nevertheless, budgeting process is rich with political expectations among parliament members and local authority. Thus, this situation seems out of the control of the contractor. The best solution might be to shift of paradigms of public building investment to private parties, as demonstrated in case study one in Revitalisation of Traditional Market Jakarta.

These feedback statements are also justified from the empirical evidence that a successful project is always followed with good arrangement of progress report, intensive communication, and less defects (Hermawan *et al*. 2013).

In the second inquiries, the other interviewee argued that the ideal approach to gain the sustainable practices (the statement is adopted from Wikstrom (2006)); Business to Sustainable approach or Sustainable approach creates the mechanism of business. The interviewee argued that the ideal approach to employ the framework (Figure 6.2) would like to impose the sustainable approach by regulation or law towards mechanism of sustainable business.

> "Ideal and realistic, I think the option B, Principles of Sustainable Construction which will form the mechanism of its Business. The principle of sustainable construction has become a necessity in the present. Increased awareness of the stakeholders to the principles of sustainable construction, which would itself naturally form mechanism to be appropriate business. For instance, the increasing awareness of the owner through the green building market will create a demand, which will further establish appropriate mechanisms to that business. When the principles of sustainable construction are ultimately up to the stage of regulation, the more real the formation mechanism of the business is, according to regulations. For instance, in Jakarta, green building regulations will certainly create demand (by law), which then would create a market and business mechanism. "(Triangulation, JU)

That argument is in line with the role enforcement of local authorities, as Osborne and Gaebler (1992) revealed. In contrary, interviewee argues that:

> "In contrast, the approach of options A. Construction business approach patterning sustainable construction is a "business driven" model and is usually a temporal trend in keeping with ongoing business. This model will follow the pattern of "business life cycle" (introduction-growth-mature-decline), which generally will not last long (not sustainable), except for "business driven", which then allows for coercive successfully regulated. If this happens, the result is imposed "sustainability". " (Triangulation, JU)

The detail of triangulation process is presented in Appendix 8-1.

In summary, the framework represents a holistic pattern in practices of public building project in local authorities. In practice, the finding cannot be generalised in other local authorities. Additional adjustments must be introduced to consider the local characteristic of the projects.

8.5.2 Interaction Model LACU

Based upon the evidence of public building cases at local authorities, by organisational context, the structure of project organisation and the activities, which are embedded in the project tasks, are built around the efficiencies of endeavours. However, the attempts to control and coordinate within organisational institutions lead to the conflict of interests among stakeholders (Meyer and Rowan 1977, Oliver 1991). In modern local government perspective, partnership can create the interaction among stakeholders to deliver new forms of accountability and relationship with related bodies and resolve some "wicked issues" in the context of local authorities (Mathews 2014:451). As Meyer and Rowan (1977) argued, integration among the stakeholders or parties can avoid the disputes, and minimise conflicts on the formal organisation, including public building projects at local authorities. Therefore, the interaction model of LACU (Local Authority, Contractor and End-Users) brings an empirically based novelty to adapt to the real cases of public building management at Indonesian local authorities.

The intensity of interaction as depicted in Figure 8.3. attempts to explain the social reality within a project level, in terms of engagement between key stakeholders to achieve the project success during its life cycle. The simulation results demonstrate the perception of interview transcript. For example , the result of case study 1 onphase 1,there are 11 tasks and each stakeholders (contractors-C, local authority –LA, and end-users-U) has their interaction level (low-L, medium-M and high-H). The weight factor of L= 0.1, M= 0.5 and H= 1.0. Each column of interaction level is determined the average value. The relative value of interaction is the absolute value between two average values by each task. For instance, D means the distance of communication (interaction) between contractors (C) and local authority (LA). $D_{C\text{-}LA}$ = 1-0.1= 0.9 (see the task 1 phase 1 of contractor at Figure 8.2).

Phase 1, Conceive (C)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Gather data			1	1	0.9	1			0.1	0	1			0.1	0.9
2	Identity need			1	1	0			1	1	0			1	1	0
3	Goals			1	1	0			1	1	0			1	1	0
4	Practicality			1	1	0.9	1			0.1	0.4		1		0.5	0.5
5	Economics			1	1	0.5		1		0.5	0.5			1	1	0
6	Resources	1			0.1	0	1			0.1	0	1			0.1	0
7	Strategies			1	1	0.9	1			0.1	0.9			1	1	0
8	Risks			1	1	0.5		1		0.5	0.5			1	1	0
9	Alternatives		1		0.5	0.4	1			0.1	0.9			1	1	0.5
10	Selling		1		0.5	0.4	1			0.1	0	1			0.1	0.4
11	Approvals	1			0.1	0.9			1	1	0			1	1	0.9
	Total	2	2	7			6	2	3			3	1	7		
	Intensity	0.18	0.18	**0.64**	**8.20**	**0.75**	**0.55**	0.18	0.27	**4.60**	0.42	0.27	0.09	**0.64**	**7.80**	**0.71**

Figure 8. 2. Example of simulation model LACU Case Study 1 Phase 1

The detail of output of simulation is presented in Appendix 7-1. The results of simulation model of LACU can be seen in Figure 8.3.

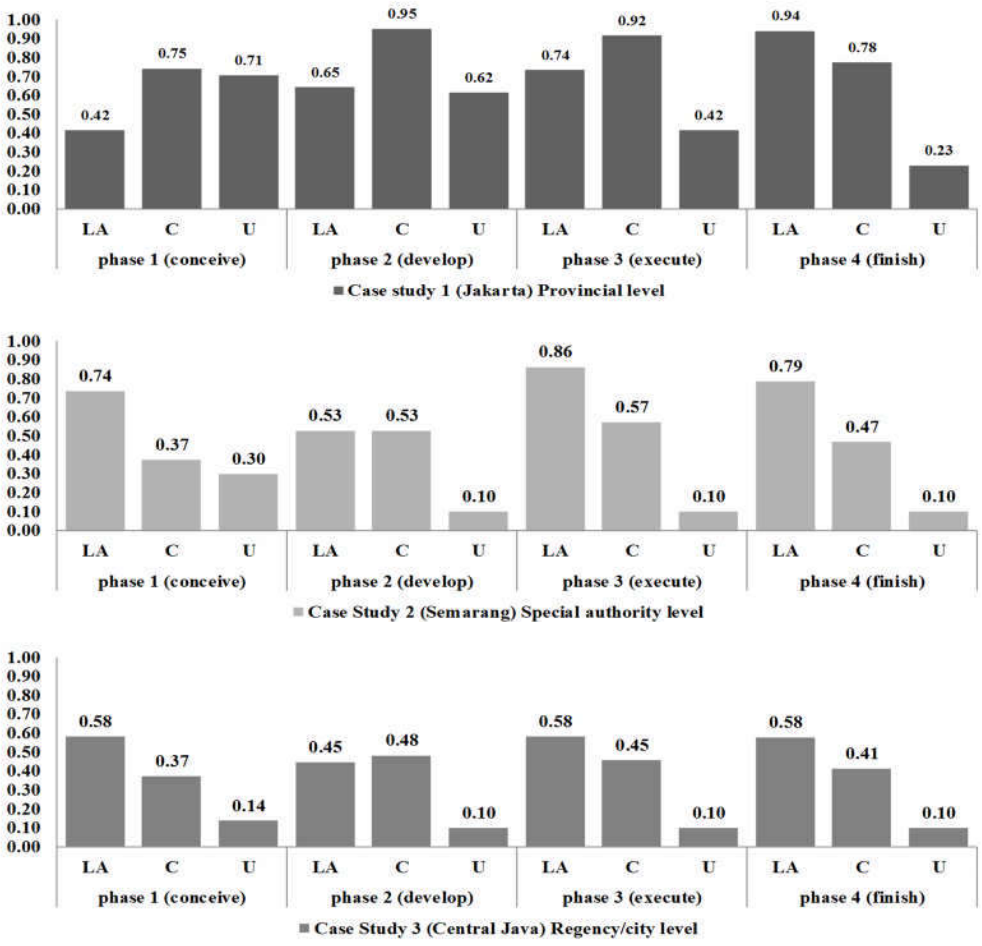


Figure 8. 3. The interaction Model LACU by Life Cycle

The intensity of interaction between local authority, contractors, and end-user (LACU) demonstrates a holistic performance at the different phases of project life cycle. The degree of interaction draws the engagement of stakeholders by each major task in public building project (see discussion in Chapter 4, section 4.6. Interaction Model of LACU and Table 4.5). The pattern of the LACU model can be a reference to examine the performance of public building management.

Generally, each case study takes a role as the unit of analysis and as the representative of the level of authority. Hence, to address the research question, these case studies can

compare through the results of model simulation in that respect. In addition, project success that is a manifestation of the interaction

Furthermore, the interactions in the LACU model are utilised as an assessment tool for local authorities to evaluate and investigate sustainable practices in public building management. At high level of policy making, the frameworks of sustainable dynamic capabilities (FSDC) will guide the direction of ideal perspective for public building authorities. On one hand, the FSDC is used to examine the general perspective of public building management, on the other hand LACU model justifies the performance of sustainable practices at operational levels.

Based upon the project performance, the criteria of completion and stakeholder's satisfaction are used to corroborate the evidence from interviews, field observation, and archival survey. Thus, the project success can be identified from interaction model and stakeholders' satisfaction as captured by interviews.

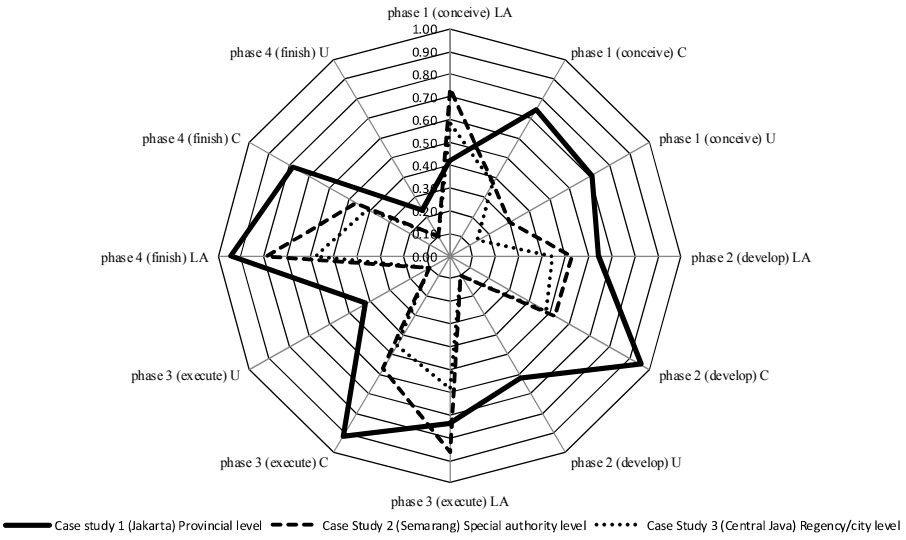


Figure 8. 4. Superposition of interaction Model LACU

Figure 8.4., shows the superposition of interaction model in the spider diagram. The higher score means the higher intensity of interaction among stakeholders during the project life cycle at each level of local authority. The simulation reveals that higher intensity of interaction has more likelihood for success at the completion of project. For example,

Case Study 1 (revitalisation Traditional Market) has a greater intensity of interaction rather than the other two cases (Case study 2 and 3). In fact, the data analysis and the result of corroborating from the field observation justify that the level of satisfaction is explicitly stated by local authority, contractors, and building end-user (representative merchant) (see case study analysis, Chapter 7).

Nevertheless, the performance parameter of interaction model by single project task is difficult to be achieved in the relative measurement at the project levels. The individual project performance is unique. Hence, LACU model is just to convey the holistic perspective of the interaction among key stakeholders for success indicators. The success criteria of the building projects refer to the Framework of Sustainable Dynamic Capabilities (FSDC) as discussed in section 8.2.1.

In regard to implementing the LACU model and achieving the ideal condition based upon the FSDC, the integration among them will be discussed in the stage of conceptualising sustainable practices in Chapter 9 (section 9.5.)

8.6 Summary

This chapter demonstrates the application framework of dynamic capabilities in public building projects. The discussion follows the three aspects of dynamic capabilities: managerial and organisational process, asset positions, and path dependencies.

The application of the framework attempts to resonance the strategic approach which emerges in each case. In corresponding to the research aims, this chapter presents a developed framework of sustainable dynamic capabilities (FSDC) and interaction model of LACU. The FSDC is proposed as an empirically based guidance for local authorities to create the mechanism for sustainable public building projects. The developed framework is the representation of holistic pattern of public building industry due to the local characteristic.

The FSDC serves to guide the local decision maker levels in terms of ideal direction to the perspective for public building authorities, where the LACU model is used to justify the performance of sustainable practice at the operational level. In addition, the application of LACU model also can be adopted as profile of the sustainable practices in public building management.

CHAPTER 9 Discussion of Results

9.1 Introduction

This chapter aims to discuss the preceding results of case studies analysis, an application of framework of sustainable dynamic capabilities (FSDC) and interaction model LACU. Three sections are presented in sequence. The key findings of case studies are discussed, focussing on the similarity and differences between some issues. Four issues are addressed to answer the research questions. The first issue concerns the roles of key stakeholders to enhance sustainable practices in public building projects. This issue was derived from an organisational perspective, specifically at project level. The second one is the pattern of strategic approaches for enhancing sustainable practices in a public building project by the application of sustainable dynamic capabilities framework. The third is about factors influencing strategic approach to enhance sustainable practices at different levels of local authority. The fourth is related to conceptualisation of the FSDC in public building projects in local authorities. This section identifies the key stakeholders who significantly influenced the project performance during the life cycle of project tasks, which have been identified on the particular cases. The last section discusses theory formulation from the case studies, where comparison of the outcomes, both in terms of their agreement and disagreement was made iteratively until reaching a level of saturation.

9.2 The Roles of Key Stakeholder to Enhancing Sustainable Practices in Public Building Projects

The discussion about stakeholder's role refers to the philosophical lens of organisation and behaviour theory in public building project. In the philosophy of organisational perspectives, there are two primary phenomena of an organisation, which are brought by interpretive/ constructivist regarding people and their role (Holmes, 1990).

The research findings are discussed based upon the interview and case studies analysis. These findings are identified from the individual and collective roles of key stakeholders influencing the project success. This research reveals the behavioural

impacts in building projects by contrasting positive (drivers) and negative (barriers) aspects based on the behaviour of stakeholders. This behaviour in a strategic approach has affected the building project performance entirely. Sections 9.2.1 and 9.2.2 discuss how the sustainable practices are conveyed by the individual and collective roles of local authorities in public building management.

9.2.1 Individual Roles

An individual role becomes the basis of the collective performance in the public building project organisation. An understanding of the individual roles is an essential requirement for the exploration of sustainable practices. Each key actor enacts different personalities which are determined from the attitudes and motivation to work. For instance, in the institution of local authority, individual perspectives are played by the public administration staff or in-house consulting engineers (i.e. designer, quality control, procurement unit, and local agency staffs). In a contracting company, the individual role relies on the project manager, general superintendent, quantity surveyor, quality control, specialist contractors, site engineers, marketing and logistic staff, accounting staff and labour force. The end-users are representatives of the building occupants or the market traders.

In Table 9.1., the distinctive role by the individuals is identified in public building projects being studied. Local authority as a regulator has influences on the project performance through dynamic of local organisation, personal attitude, and local preferences. The instability of political orders by the change of local leaders often influences public building project organisation. Sometimes, the local leaders exert dominant role in the engineering adjustment and political decisions. Furthermore, the personal attitude of the public administration staff and local preferences often hamper strategic decisions at the project levels. However, the analysis of successful projects suggests that the cooperative manner of local leader provides clearer tasks, less conflict of interests among stakeholders, and satisfies the local needs, such as in the project design and minimum level of service. The change of local leader is usually followed by sporadic amendments of the design as a consequence of unstable decisions in the project management tasks. This has shown to negatively impact on project performance.

Table 9. 1. Sustainable Practices by individual behaviour in Public Building Projects

Key actor	Role	Behavioural impact in building projects	
		Positive (drivers)	Negative (barriers)
Local Authority (Regulator)	• Dynamics of local organisation (i.e. changing of local leaders) • Personal attitude • Local preferences	• Less conflict of interest among stakeholders • Clearer tasks • Satisfying local needs	• Changes design sporadically • Unmanageable tasks • Instability decisions on the ground
Contractors (Executor)	• Experienced in specific project (expertise) • Sufficient of skill resources • Committing details in projects execution	• Efficiency in staff management • Multi-tasking personal • Qualified finishing products	• Imbalanced expectation with local authority • Over qualified expertise which impact to extra cost. • Profitability consideration rather than quality performance
End-users (Demand)	• Knowledge capacity • Needs (expectations) • Habits or life style	• Economic effects • Good habits in occupying • Promoting sustainability by social networks	• Less knowledge, less awareness • More demand, more facility, more waste, more energy needs, more controls • Social environment influencing individual decisions (society networks and social media) and people power as constituent often direct the local policy in democratic atmosphere (state)

At local authority, hierarchy of organisation is enacted as a mechanism for for scrutiny, in terms of organisational activities, quality assurance of minimum service, independency toward the operational of building projects and accountability of management. The organisational activities in public building project refer to the project tasks which illustrate the sustainable practices in each phase: conceiving, developing, executing, and finishing.

Contractors in enhancing sustainable practices at the organisational level should consider their company based (location), sufficient support of capital investment, maintaining supply chain, and maintaining their reputation. The empirical evidence justifies that proximity of the contractors, which are company based, influences the effective communication during operational of project tasks. The good cash flow and supply chain of the contractor's company in the execution of project is fundamentally important.

In public building projects, building end-users have collective roles in terms of behavioural aspect, and legitimation factors. For instance, the end-users at the revitalisation of Traditional Market building in Jakarta, in order to reconcile the stall market price with local authority and contractors, have dominant voice in the execution of the project. The revitalisation project was approved by synchronising three interests, namely between local authority, contractors, and end-users. Local authority as a regulator has to ensure that the revitalisation project is running smoothly without social conflicts among merchants and to assign the feasibility of the project. Moreover, the contractor should consider the profitability aspect of their business plan, the affordable price for the merchants (end-users), and being reliable for technical aspects, such as constructability of the structure of market building and readiness of sub-contractor specialist to support the revitalisation project.

Contractors, as the executors, play primary roles in public building projects. The success of a project depends on the contractor's capability. Most of experienced contractors have specialists, sufficient skills resources and committed in details during project execution. Therefore, project success is measured from the efficiency in a project organisation by recruiting multi-tasking talents as project staff (i.e. Case Study 1, as quantity surveyor, site engineer and managing labourers are handled by one member of staff) and having a qualification in building projects. Otherwise, inexperienced contractors are not aware of harmonising interest to the local authority, therefore influencing the building quality performance, either unrealistic cost or under qualified team work. Therefore, profitability becomes a primary consideration rather than standard quality of building's work.

The building's occupants (end-users) in the context of sustainable building should have a proactive role, because energy consumption and waste management become important issues after construction. The end-users' role is influenced by the knowledge capacity, the demand (i.e. building as a facility or just supporting activities), and life style (i.e. leisure, sport or art, social community). The smart end-users have awareness of building operation which affects their behaviour during occupation, in terms of energy consumptions, waste management, and social interaction with other key stakeholders. However, individual end-users who have less knowledge capacity toward the building occupancy become less aware of sustainable practices. For instance, energy

consumptions are reflected from the discipline to switch-off the electricity after leaving the bathroom. Moreover, increasing demands of buildings should also increase waste and energy consumption.

9.2.2 Collective Roles (Organisational Level)

In the organisational level, collective roles are defined as group activities, interactions, or behaviours. Key stakeholder's role in organisational level refers to the organisational behaviours (Brooks 2006). Therefore, individual roles to enhance sustainable practices in organisation level are explained through different actors, as presented in Table 9.2.

Table 9.2. Sustainable Practice by Collective behaviour in Public Building Projects

Key actor	Roles	Behavioural impact in building projects	
		Positive (drivers)	Negative (barriers)
Local Authority (Regulator)	• Hierarchical organisation • Standard of minimum service or Code of conduct • Role as regulator or operator • Accountability provisions	• Control function in the big organisation • Easy for Quality control • Avoid potential of corruptions • Regularity in management or habitual action in organisation	• Bureaucratic style, time consuming for decision making • Gaps among service providers with different capital investment • No independent decisions in every stage of construction project or dualism role • Local culture predominantly influences the project organisation habits/ motivation to work (i.e. diversity of Indonesian culture needs harmonising perceptions to collective works)
Contractors (Executor)	• Company based (Location) • Sufficient of Capital investment • Established Supply-chain • Reputable company	• Distance of management office influencing budget • Good cash flow, good management • Supply chain creates a reputation • Creating legitimacy by the people/ industry	• Ineffective project management • Lack of cash flow, lack of working performance • Monopoly practices in construction business • Costly experience and experts expenses
End-users (Demand)	• Market population • People behaviour • Constituent power	• Certain market • Good community, good communication, then good management • Public policy enforced by constituent aspirations	• Big population, big demand needs a big budgetary support • Society's culture is predominant in local management routine (i.e. issue of diversity in each region: language, cultural habits) • Democratic euphoria affects instability in decision of local leaders in building projects

The key stakeholder's role to enhance the sustainable practices empirically differs, in terms of the strategic approach to gain the project success. Local characters of stakeholders in project levels are encouraged through various capabilities and potential resources. In other words, the diversity of local characters of public building project cannot be generalised for all cases. Thus, the application of dynamic capability framework is run to address the research questions on how local authority can enhance sustainable practices in public building projects at different levels of authority. In this regard, the research findings will be discussed in Section 9.3.

9.3 A Strategic Approach to Enhance Sustainable Practices in Public Building Projects

The application of dynamic capability to the case study of public building project provides a strategic approach and an operational method to enhance sustainable practices (in Chapter 6) and project success. The discussion of findings is delivered through three sections representing aspects of dynamic capabilities of framework: managerial and organisational process, assets' positions, and path dependencies. A case study represents a unit of analysis which is emanated from different levels of local authorities. The detail of the strategic approach and operational method can be seen in Appendix 9-1., Table 9-1a,b and c.

9.3.1 Managerial and Organisational Process

The strategic approach is typically conducted by bureaucratic organisations with the involvement of political expectations of local leaders and parliament parties. The coordination and integration of the project organisation level have resulted in the various methods for enhancing sustainable practices. Uniqueness of individual building project as discussed through individual roles and collective roles in Section 9.2 reveals that the method to generate the sustainable practices cannot be generalised. However, effective organisation which is established by experienced members of project team proves that egalitarian management style is the most effective and efficient attempt to deliver project tasks.

In the learning stage, the procurement becomes a primary task being concern by all levels of local authority. The learning process is adopted from the historical evident of the failure management of the projects. Developing procurement system of public building project in local authority involving the partnership with private investor and local government provide a more successful result than those using conventional CCT (Compulsory Competitive Tendering).

Principles of value creation through dynamic capabilities view suggest reconfiguration of the organisational structure of public building management by the capacity of transformation within repetitive behavioural changes (Amit and Schoemaker, 1993, Teece and Pisano 1994). This research confirms that reconfiguration and transformation processes are identified as indicators of environmental changes. In fact, transformation at provincial level (case study 1) has demonstrated a manoeuvre of business activities from specialist supplier of infrastructure equipment to become general contractor for public building project. However, at university building case, the internal organisational transformation is only possible by local leader's intervention or initiatives by building occupants to utilise the efficiency of budgetary spent or reconfiguration the structure of faculty management, particularly by separation of staffing unit for building procurement, and appointing the specialist staff in procurement unit. In additions, the typical managerial and organisational process is similar with regency and city level. The evidence is coherent with strategic responses in an institutional process and resources dependent perspectives from theoretical sampling from social science as developed by Oliver (1991). That strategic response perhaps becomes a manifestation of strategic approach in public buildings.

Oliver (1991) identified the behavioural repertoire to exhibit organisational response by institutional expectation and pressures. There are five institutional antecedents corresponding to the basic factors: cause, constituents, content, control and context. Each factor is entitled by two predictive dimensions of strategic response. In order to determine the strategic choice, Oliver (1991) provided ten hypothetical analyses in each category, as presented in Table 9.3.

Table 9. 3. Institutional Antecedents and Predicted Strategic Responses

Note: Adopted from Oliver 1991:160. For the description of strategic responses, see the detail at Appendix 9-2. Italic words mean indicated by this research.

Based upon the institutional perspective in Table 9.3, the Indonesian construction industry is identified as having two characteristics, compromising and manipulating responses. In the public building management, the organisation of local authorities often conflict with key stakeholders' demand and internal objectives based upon their autonomy. Compromising tactics means a bargaining or balancing expectation with constituent in the local context (Oliver 1991). A balancing is also defined as "a tactical response to a process" or "stabilisation" (Oliver 1991:153; Rowan 1982). In addition, compromising in public building management at local authority context refers the ability to accommodate the constituent demands. But, sometimes at the project levels, the stakeholders employ the pacifying tactics as partial conformity among constituent expectations. Finally, the bargaining tactic used by stakeholders in public building

projects organisation as active compromising process. The bargaining aims "to exact some concessions from external constituent's expectation" (Oliver 1991:154). In this research, compromising responses are represented by the evidence of case study 1 (revitalisation Traditional Market in provincial levels). Compromising responses of key stakeholders in each phase of project life cycle demonstrate efforts of balancing, placating, accommodating and negotiating between stakeholders and institutional elements as discussed in Chapter 7. Balancing the expectation of local authority (*PD Pasar Jaya*), contractors and merchants was captured by interaction model LACU (see Figure 8.1.). The reflection of placating and accommodating strategy within building project organisation was demonstrated during the socialisation of revitalisation programme to merchants (end-users of Traditional Market KGM). Meanwhile, the bargaining processes have been implemented in two activities: first, the selection of contractor by local authority and involvement of merchant for approval; second, stall price negotiation between contractors and merchant.

The second domain characteristic is manipulating response. This tactic is identified as the most active responses among other tactics as defined by Oliver (1991). Manipulating refers to opportunistic attempts as a response to the organisational pressures. There are three kinds of manipulation tactics: co-opt, influence and control. These kinds of tactics can be interchangeably adopted based on the local situation of constituent. The manipulating strategies were mostly reflected by case studies 2 and 3.

9.3.2 Asset Positions

Asset positions are fundamental capital for business organisation, including the public building projects. Sophisticated performance of managerial aspect is meaningless without the support of asset positions. Assets position is the "soul" of the building a business. Furthermore, all strategic decisions use asset positions to gain competitive advantage in market competition.

Based on the case study analysis in Chapter 7, there are two assets which predominantly become influencing factors for project success: financial and reputation assets. Many lessons are learnt from the public building project failures; the biggest mistakes of the public building project, either in province, special authority, regency or city level were influenced by lack of cash flow during the project execution, and most

of them were new players or new comers in the building construction industry, who were not very competent in construction business. Nevertheless, failures were also found in building projects run by experienced contractors.

9.3.3 Path Dependencies

Path dependency is a record of organisational learning process and also a historical document of achievement in a particular project (Teece and Pisano 1994:547, Teece, Pisano and Shuen 1997). In the nature of Indonesian public building management, path dependency could be traced in the procurement system, particularly in the pre-qualification stage that tendering participants should provide their company profile and relevant track record.

The result of the interviews and case studies analysis (Chapter 6 and 7) suggest that most public building projects, which have small budgetary allocation have complied company portfolio submission. However, most participants of CCT (competitive compulsory tendering) are inconsistent in providing actual experiences of their company. Even, experienced companies which are measured from their age do not seem to convince the tender committee. In fact, three case studies confirmed that in the previous experiences, companies which have submitted their proposal to the tendering process often lack of performance in the project execution.

KGM project was claimed by the local authority as the first success revitalisation in the Greater Jakarta area. Revitalisation of Traditional Market was overrun since 2009; it means that previous revitalisation projects did not meet the authority goals. As confirmed by contractor and local authority during the informal discussion, KGM project is the role model of the successful revitalisation project of Traditional Market in Jakarta (See case description in Chapter 7, Section 7.2.2). In unsuccessful revitalisation projects, failures were caused by several factors. The first is related to disagreement between contractors, local authority, and market merchants, particularly on the expectation of stall design. Revitalisation process lacks of engagement with merchants (end-users). The selling price of the market stall is not affordable for the merchants. Thus, cash flow of instalment payment (as Project Revenue) for market stalls is under estimated due to the business plan of that project. Finally, the business plan of revitalisation market project cannot reach the breakeven point (BEP) and the project is

not accomplished properly. Second, most revitalisation Traditional Market projects are undertaken by inexperienced contractors, in terms of relevant project experiences. The contractors who are involved in the revitalisation should be aware that dealing with Traditional Market project requires appropriate technical and social skills. Social skills are defined by the ability to interact with market merchants and social environment that embody thought of social construction rather than solely engineering adjustment.

The second case was found at the University Building project in Semarang. Case of GKU and SKW building project is the focus of discussion in this regard. Based on the document analysis of the procurement between GKU and SKW at pre-qualification stage, it was found that the experience or track record of contractors is inconsistent with dynamic capability aspect.

The third case was found at Building Investigation (BI) project in Central Java. The investigation results found that 12 of 34 building projects in regency and city level were considered building failure and having defects as defined by Act No. 18/1999. Moreover, 5 of 12 cases were brought to the courts and some people in charge (Committing Officer/ PPK; Contractors, Project managers) were sentenced guilty. Recalling the evidence from the investigation documents, the procurement has been setting up properly by local authority. In fact, the supervision records on five building projects, which become an issue in this study, indicate that tendering projects were recorded to have a good performance within their procurements and supervision during the project life cycle.

In summary, lack of awareness regarding contractor's experience in the prequalification document as well as in execution stage indicates unsustainable practices. The phenomena of unsustainable practices at each level of local authorities justify that inconsistent compliance to the public building regulation (technical design) and Competitive Compulsory Tendering (CCT). The capability aspect of contractor can be identified through asset positions and record of experience by the achievement on previous project (Path dependencies). Based on the analysis of case studies, this research concludes that factors influencing degree of success among public building cases are embodied by reasonable profitability, adequate resources to increase productivity, less complex project, and involving competitive environment. The application of dynamic capability framework throughout public building cases at

different levels of local authority was acknowledged to be the success factor influencing strategic approaches to address unsustainable practices. Factors influencing project success are discussed accordingly in Section 9.4.

9.4 Factors Influencing Strategic Approaches for Enhancing Sustainable Practices at Different Levels of Local Authority

Results of case study analysis conclude that the success of public building project is influenced by profitability of the project, adequate resources, complexity of the project, and competitive environment. They are discussed in the following sections

9.4.1 Profitability of the project

The construction industry is a manifestation of business activities; therefore, the profitability is always one of the main objectives for contractors. Profitability aspect on public sector cannot compete with the end-users, because the compensations relying on the public satisfaction during services delivery. Therefore, it does make sense that most of local contractors expect too high profit margin become their company target in the operational management. Among three case studies, some evidence shows that stakeholders' orientation in profitability influences the public building performance.

In light of profitability, there are three symptoms in practices that have been captured in this research. These symptoms reflect the similar appearance through project performance, in terms of time completion, quality material of building elements, and managerial approach to handling the project from initiative, design, execution and decommissioning stage. For instance in case study 1, contractors determines the profit-margin diligently through their business plan. That business plan is also reviewed based upon the long-term risk due to their capacity within the project tasks. They learnt from previous cases (i.e. KD market, and PM market), as project manager of KGM project stated.

> "Our expectations are not too high in the beginning. The first relates to the profit margin, that is the natural thing. We obtain the profit margin, although unlike the expectations in the beginning but not too far from the value". (TM01, Project Manager)

In contrast with inexperienced contractors at a special authority level (University Building Projects), TKR in GKU project (anonym), profitability is expected by the contractors in an inappropriate manner. Since the early procurement stage, conflicts of interest have raised between public building stakeholders and contractors, particularly because the qualification of contractor is below standard and has "low ball" prices. Thus, profitability calculation is performed on the project proposal, and that calculation actually unreliable to be executed, as stated by former procurement committee.

> "…Contractors' competency based on those minimum experiences, does not mean that they have ever built in great volume of project with great construction value but it is a one story building and the technology content is very simple. So, it could not be said [as a] qualified [contractor]. "(UB02, Procurement Unit)

The similar sounds in regency or city level, while the profitability issues are raised from the political decision at the parliament level.

> "… Related to auction rules, the winning bidder is selected based on low price. So if the bidder wins tender with lower price, even though [He] has many experiences and personnel expertise, will not affect to buildings' quality."
>
> "… People in House of Representative who have project, they ask the contractors to work on it. Although their ability is not qualified, but still be forced to work on it. …". (BI02, Building investigator)

9.4.2 Adequate Resources

Delivery of resources contributes to the project performance differently among local authorities, in terms of material supply, technology support and labour force. At project level, a cash flow issue influences the adequate resources. In regard to the resource base view (RBV), the management of resources consider that the strategy to increase the productivity refers to the project time-scheduling and implementation of project tasks on the project routine. However, the ability to produce the strategic approach perhaps can only be demonstrated by experienced contractors.

The data analysis reveals that project resources are delivered in different methods and costs due to the local characteristics. Revitalisation of Traditional Market in Jakarta demonstrates the outstanding resources management. For instance, experienced sub-contractors of structural elements (pre-cast material) are supplied by a professional pre-

cast company which has national reputation. Meanwhile, on the university building (GKU) project, the material resources supply deliveries are eventually distracted by cash flow problems during the execution stage. Incompetence and incapability have been demonstrated by contractors of GKU project during the project life cycle, but actually can be identified as symptoms in tendering stage. At the regency and city level, skill of labourers and experts become a shortage, in terms of design quality or engagement among local authorities and stakeholders. However, the most successful project has a good performance of resource support and healthy cash flow on the execution stage. Different technology within the public building design influence the resources management at the project level. However, most public building projects in urban areas have a better performance rather than those in rural or sub-urban areas.

9.4.3 Complexity of the project task

Public building practitioners at the different levels of local authority have various perspectives about complexity. Although in general, public building project is a manifestation of complex activities. Based upon the evidence of case studies, complexity has a distinctive character. In case study 1, a complexity factors lies on the behaviour of market traders (merchants). Key success of the revitalisation project depended on how to resolve the merchant responses during the revitalisation project.

> *"*The complexity of this market revitalization project can be seen from the level of merchant's complaint, … If the market is alive, merchants are desperately trying to pay the mortgage because if their stall or market stall of KG repossessed because of late to pay, the queue is already a lot." (TM01, Project Manager)

In contrast to case study 2, University building project, the special local authority (university) assumes that the construction technology of the GKU project not necessarily complex. The GKU building structure only has a lift. No others high technology of structural element on it. As respondent UB06 stated, that contractors lack of experience in achieving success.

> "... It is enough with the cooperation among stakeholders, and if there is a synergy between them, I think it is not hard to achieve success. If it is there

(GKU), because they lack of experience. ... I think if money is not an obstacle, I said, 'Bandung Bondowoso'* If I were you, because it is your company's reputation problem". (UB06, local authorities, former dean).

*Note :** The term is used as a metaphor to mobilise all resources belonging. Bandung Bondowoso is a historical story of *Roro Jonggrang* Temple construction in the area of Prambanan, Yogyakarta. The story is taken about a java knight who wanted to propose to a princess named *Roro Jonggrang*. The Princess asked the knights to build a thousand temples in one night.

Thus, the former Dean argues the problems exist in contractors' management team. Therefore, this situation identified as a trigger conflict of interests between contractors and local authority.

Similarly, in regency and city level, the complexity of the project depends on the practitioners and local authority's expectations. The typical problems in regency and city level predominantly exist in competencies that are caused by low skilled and less capital investment of the contractors. In addition, insufficient supply of the experts in regency and city levels reflects in the distribution of chartered engineers and skilled labour. Most of developed regencies and cities have more chartered engineers and skilled labours, as we can see in Figure 9.1.

Figure 9. 1. Distribution of Chartered Engineers and Skilled Labours in Regency and City of Central Java, Indonesia (LPJKD 2011)

9.4.4 Competitive Business Environment

Competitive environment is a medium to cultivate the business in public building industry. Jakarta as the super hub of national construction business, has established the competitive environment. In line with the argument of competition theory and equilibrium law, competitive environment will generate the business activities quicker than less competitive one. Competitive environment refers to contractors capabilities in terms of sustainable services in building project activities. Regarding sustainable practices, competitive business environment considers the social economy impacts and eco-friendly products in practice. However, the ultimate goal of competitive

environment is creating conducive environment to encourage competitiveness of contractors.

The case studies analysis identified that competitive environment is different at each level of local authority. For instance, competitive tendering process of KGM project has been undertaken by a different manner. Market trader is appointed to authorise the winner of tendering process rather than of procedures of Compulsory Competitive Tendering (CCT).

> "The process is through several developers. The first developer is appointed by PD Pasar Jaya directly, unfortunately the price per unit being offered is not affordable according to the merchants, because our merchants come from lower-middle class. Thus, I attempt to stay because our previous budget-platform has been set-up. Not me, but my team (team 11). We were in the area of 17 trying to contact PD Pasar Jaya, but it was not affordable to us, then we failed. Finally, our team (team 11) was asked to find developers who can relieve the merchants. First time we searched for the developers, the price had matched the developers' intention, but it was rejected by PD Pasar Jaya, perhaps it did not matched PD Pasar Jaya and also merchants plan. Backward again, until I held a meeting with merchants for several times, but could not reach a conclusion because it was not approved. They kept the argument, the [construction design] drawing that they have agreed. Finally, up to three times of fails, but now developers are fixed in price that we want, they agreed, then it was approved by PD Pasar Jaya." (TM06, merchant)

In contrast with the other two projects, the appointed contractors are selected through Compulsory Competitive Contract Tendering (CCT).

9.5 Conceptualising Sustainable Practices in Public Building Project at Indonesian Local Authority

To develop theories from the case studies (Eisenhardt 1989, Alvesson and Sanberg, 2011), this section discusses the conceptualisation of sustainable practices in public building projects based on the empirical evidence from Chapter 6, 7 and 8. At the first stage, the theoretical building from case study research is based upon the replication logic across the cases and explanation building from the "reasons" behind

the relationships among research constructs (Eisenhardt 1989). The second stage attempts to look at the comparison the conflicting literature and similar literature. This research considers the relevant social theories regarding public building management that refers to resources dependence perspective (Oliver 1991), as discussed in section 8.4.1. Finally, the process of building theory will complete when theoretical saturation is achieved. Saturation is defined as the condition when "the incremental improvement is minimum" (Eisenhardt 1989: 545).

Based on the institutional theory applied to public building projects and local government study, the discussion of conceptualising process is a reflection of the project organisation and behavioural aspect of key stakeholders to achieve the project success. A project success in public buildings at the local context is contended on the legitimacy concept with public sector management (Pettigrew 1985, Pablo *et al.* 2007), in terms of earning reasonable profit margin through adequate resources. Regarding the resource reconfiguration based on the dynamic capabilities in public building management, it can be represented by individual and collective roles of key stakeholders. In the individual roles, the capability of skilled labourers (i.e. chartered builders, plumber or electricity) and building experts (engineers or specialist contractors) in the project performance levels can be depicted through interactions among key stakeholders as demonstrated by the model of LACU. Involvement between key stakeholders within the interactions is also empirically justified from the case studies. Meanwhile, sustainable practices in public building project is emanated from the strategic approach by key stakeholders (local authority, contractors and end-users), as an implication concept from dynamic capabilities.

Considering the project tasks and the behavioural aspect among key stakeholders, the LACU model is consistent with the theories of organisational routines and organisational changes (Feldmand and Pentland 2003, Farjoun 2010, Pentland, Hærem and Hillison 2010). Hærem, Pentland and Miller (2015) that assumed tasks are inseparable from the behavioural aspect. In addition, based upon the contemporary theory, separation between tasks and behaviour can be problematic (Wood 1986, Campbell 1988). Even, independency between observer and information is difficult to be achieved (Weick 1995). Tasks and actions in public building management based on the context of complexity concepts correspond to the collective roles of key

stakeholders in social process (Hærem, Pentland and Miller 2015, Daft and Weick 1984). Thus, intensity of interaction demonstrated by the LACU Model reflects the behavioural aspect among local authorities, contractors and end-users.

The framework of sustainable dynamic capabilities attempts to illustrate the activities of high level actors of local authority in public building management. A strategic approach is determined from initial framework of dynamic capabilities and associated with sustainability principles that are successfully demonstrated by different actors. Regarding the hierarchical aspect in the organisational context, the project tasks in public building management significantly influence the organisation level rather than individual actors (Hærem, Pentland and Miller 2015). Thus, it could be concluded that interactions among key stakeholders in public building projects have a different implication to project performance.

In contrasting to Teece *et al (*1997), in this research work, FSDC is derived from public building industry which has low velocity market. Similarly, in a study of stakeholder mapping by Olander and Landin (2005), the interaction of various actors in building construction sector influences project performance. However, the empirical works by this research demonstrate novelty in terms of guiding approach to assess the sustainable practices from a strategic response of key stakeholders to achieve project success. The success of public building project could be defined from pragmatic lens, namely where the completion of project tasks is mandatory and the advantages or building function should exist for end-users. Thus, a sustainable building project based on the local context means a complete project, which has impacts to the social-economy for the end-users and provides minimum impacts to the environmental changes.

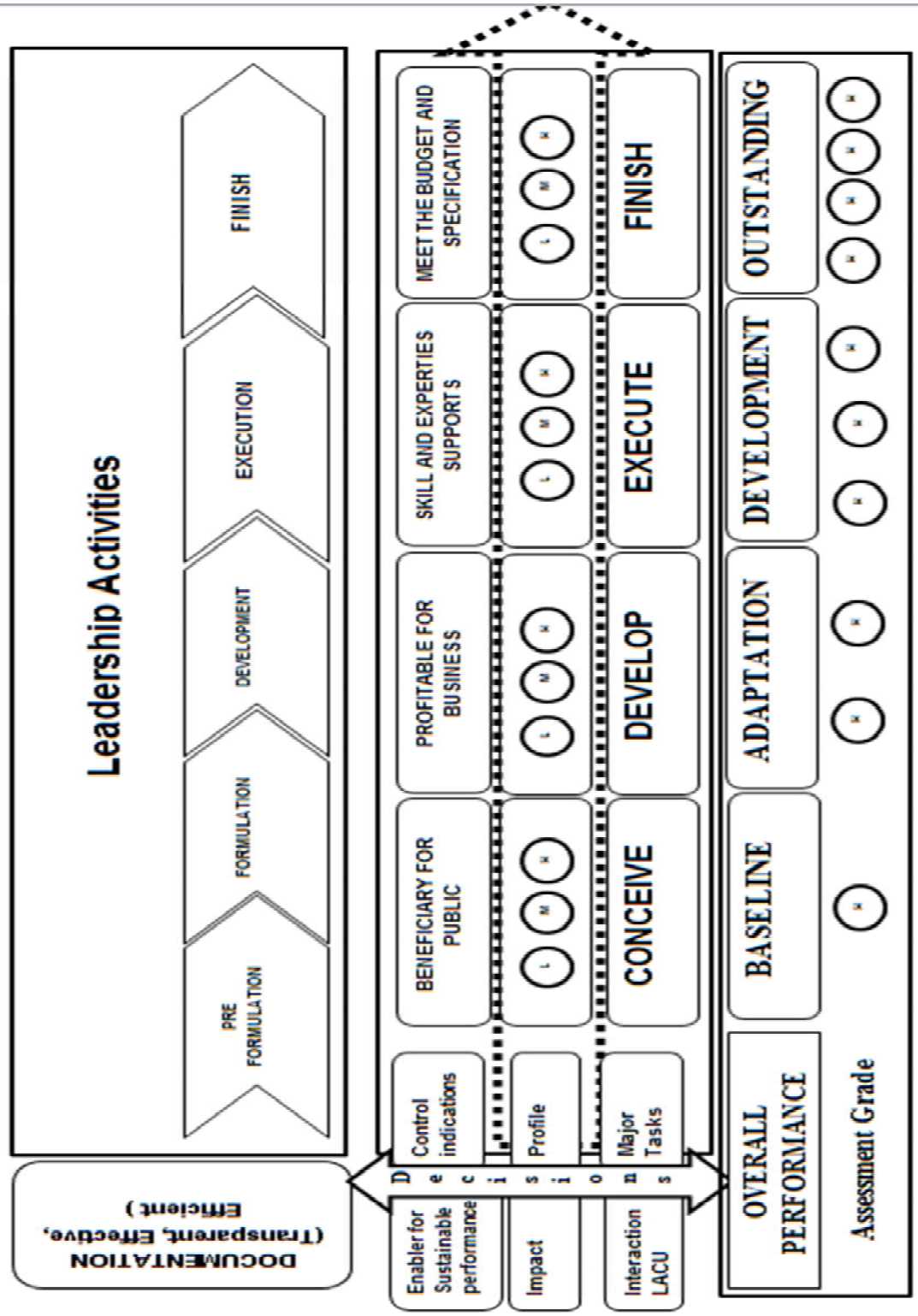
The definition of sustainability in public building project at local authority context can be explained that sustainable practices cannot be limited to the applications of construction technology (i.e. green technology or standard of building assessment). The local sustainability (i.e. Local context in Agenda 21) of this research concept also promotes the local capabilities, in terms of social-economy aspects. The projects size always indicates the range of project values (see Appendix 7-2) and implies the operational cost and project tasks. To address sustainable practices on the ground is not easy for small contractor firms. The dichotomy of priority between project success and profitability exists as a barrier of sustainability implementation in the local context. The

analysis of the empirical data suggests a dominant role of the key stakeholders, particularly in their attitude for achieving sustainability. This attitude can provide a balancing mechanism to facilitate the implementation of sustainable practices. This attitude stems from moral obligations to the business entity and engineering quality as a minimum requirement to take a step toward sustainability. For instance, a small project case should concern the issues of health and safety at the operational levels, which provide a special budgetary portion from the project cost. In fact, most of local authorities, particularly in small project cases (Grade 1 to 4 by project value <= 2.5 billion IDR) never assert explicitly and clearly state the health and safety aspects as mandatory tasks, either in the project cost and supervision or building control guidance. Even, the local authority enforcement by building regulation is ineffective to do so, as demonstrated by disputes in the building investigation in Case Study 3.

The implication of strategic approach to enhance sustainable practices provides new insight for strategic management body of knowledge. Based upon the character of capability logic, a strategic approach suggests an opportunity for innovations in construction project management in the local authority context. In local government studies, the strategic approach could be a trigger for re-inventing local authorities in a new direction to convey the sustainable practices at public building management. Local authority has important roles to be an agent of changes. As Hærem, Pentland and Miller (2015) argued, more evidence from top-down effects by multiple-actors are sufficient to influence success, including public building project tasks in this conceptual development. From the circular concept of sustainable principles, the FSDC represents the sustainability aspect from the actors, process and impacts through organisational perspectives in strategic management domain. At the organisational levels, a strategic approach embedded as a behavioural entity to exhibit the institutional expectation and pressure (Oliver 1991).

The empirically based guidance needs to accommodate the multi-dimensional aspect of public building management at the local authority context. That guidance should be integrated with the behavioural aspect among local authorities, contractors and end-users (LACU) through the leadership activities and provide an indicator-based performance for the development in the future. In addition, the leadership activities crafting public building policy, where the portfolio during the project management

activities is enacted as a decision-making tool. This research suggests “a grand design sustainable dynamic capabilities (GDSDC)” (as presented in Figure 9.2.) to accommodate the new concept in public building management at Indonesian local authority levels.



Note: Control indications: L = No changes for public by existing condition; M = Any changes for public by existing condition but still not significance; H = The project contributes a significant changes for public

Figure 9. 2. Grand Design Sustainable Dynamic Capabilities

GDSDC is established from two major components of assessment. The first assessment is based upon the interaction model of LACU which embodies major tasks of four phases in the project life cycle. The second assessment refers to the control indication from the sustainability pillar (social-economy and environmental impacts). The ultimate aim of GDSDC is encouraging changes amongst public building stakeholders from current practices. The combination of two major components of assessment becomes the overall performance that reflects the whole performance of sustainable practices in public building projects. Even, the local constituent gives a response, whether it is compromising or manipulating; both responses have a significant impact to the final decisions.

GDSDC is provided for the local leaders or decision makers in public building management at local institution by the following objectives:

(1) To guide the local leaders or decision makers, in terms of scrutiny and control activities to decision making process of public building management (i.e. initiative programme, pre-design and design stage, procurement and tendering process, preparing standard document and undertaking the assessment in a certain public building project based upon FSDC)

(2) To investigate public building performance (i.e. Baseline, Adaptation, Development and Outstanding) throughout behavioural aspect (LACU model) which is embedded in the performance of project tasks execution (Interaction and Impact) along the project life cycle (Conceiving, Developing, Execution and Finishing)

(3) To depict the sustainable practices in public building projects through "Control indicators" (i. e. the project should have beneficiary aspect for public, profitable for business, pay attention to involvement of skill labour and experts during the process, and meet the budget and technical specification).

(4) To encourage behavioural changes of public building stakeholders. For the future challenges, the local authority management could implement the tools and a new strategic approach independently.

9.6 Summary

This chapter presents the discussion of results from case study analysis (chapter 7) , application framework and interaction model (chapter 8). Four thematic discussions attempt to address the research questions

The first section discussed of the stakeholder's roles to enhance sustainable practice in public building management. Corresponding to the practitioners' perception on sustainable practices, the individual and collective role of stakeholders suggested drivers and barriers factors. Based upon the results of interviews and case studies analysis, the contractors play the primary roles in public building projects. However, the changes towards sustainable practices still depend on local authority role at organisational level (collective role).

The second section presented an application of conceptual framework dynamic capabilities within current practices on local public building projects. The discussion focused on a strategic approach based upon three aspects of dynamic capabilities (managerial and organisational process, asset position and path dependencies).

The third section elaborated factors influencing strategic approaches for enhancing sustainable practice at the different level of local authorities. This research identifies four factors for the development of policy for sustainable building management. A successful project building projects embody four influencing factors; (i) a project should has a reasonable profit margin; (ii) adequate resources can be reflected by a sufficient cash flow; (iii) complexity of the project tasks was influenced the execution of sustainable practices; and (iv) competitive business environment creates conducive environment and encourages competitiveness of contractors.

The fourth section concluded the discussion to the concept of sustainable practice in public building project through theoretical arguments and empirical evidence from case study method. The analysis of the empirical data suggests a dominant role of the key stakeholder attitude for achieving sustainability. The GDSDC has several limitations; the first limitation related to the empirical data. The research data were collected from purposeful sampling, which location and project characteristics were selected based on accessibility and ethical issues. Therefore, flexibility of framework implementation needs improvement for further practices. The second limitation is related to the

geographical issues that the sampling of project cases is located in Java island. As discussed in Chapter 3, most construction projects were still concentrated in Java (BPS 2014). Thus, identifying local characters of public building stakeholders at outside Java needs further assessment. The third limitation of GDSDC is related to the lack of expertise in the implementation, and therefore, need for technical support for local stakeholders. The GDSDC is still a conceptual model which needs to be tested in the industry setting. Therefore, this conceptual model requires further research to develop a protocol for action research.

CHAPTER 10 Conclusions and Recommendations

10.1 Introduction

This research has developed a framework of sustainable dynamic capabilities (FSDC) in public building projects. This research applies the dynamic capabilities framework to examine sustainable practices in public building projects at different levels of local authorities. This chapter provides the conclusions of the research and reviews of the achievement of the research objectives, which are:

(1) to explore the perception of different stakeholders on sustainable practices
(2) to develop a conceptual framework based on existing literature in the domain of strategic management and dynamic capabilities.
(3) to identify key factors for the development of policy for sustainable building management

The chapter provides a summary of contribution to knowledge in sustainable practices of public building projects; limitation of the research, followed by a number of recommendations for further research.

10.2 Summary of Key Findings

The major findings from preceding chapters are presented under three headings (resulting from the achievement of the three objectives stated above).

1. The implication of strategic approach at different levels of local authorities towards project success: Stakeholders' roles in governing public building projects
2. Concept of sustainable practices of public building projects at Indonesian local authority context
3. A guidance to enhance sustainable practices in public building management

10.2.1 The Implication of Strategic Approach to Project Success: Stakeholders' roles in public building projects

Achieving success in public building projects during the rapidly changing, local political climate provides a significant challenge for stakeholders in the construction

industry. Local sustainability concept as declared by Agenda 21 (UNCED 1992, Du Plessis 2002) encourages stakeholders to initiate radical changes through the application of a strategic approach to influence sustainable practices in public building management. However, developing a strategic approach would depend on the local priorities, goals and success criteria, which are dynamic and influenced by the expectations of various stakeholders involved in the procurement of public buildings. This research has demonstrated how the strategic approach was defined, formulated and applied in the specific context of public building projects using case study method. Success in this research context means sustainable projects, where a balanced interaction between stakeholders can be found in the LACU model. The engagement of stakeholders (organisational level) individually or collectively reflects how they develop tactics to achieve successful projects.

The strategic approach is a manifestation of "fresh idea" for the future sustainable practices by learning from the past experience at a particular authority level. This approach should deliver local needs and embody an ideal fashion by four major influencing factors:

(i) reasonable profitability of the projects which can be a trigger of motivations of practitioners in the project activities;

(ii) adequate resources which would be the basis of productivity that demonstrates the contractor's cash flow subsequently;

(iii) less complex project implies the reliability of the design, capability of the practitioners and also reflects the execution of sustainable tasks during the project life cycle;

(iv) conducive business environment to encourage the competitiveness of contractors.

The intensity of interactions among key stakeholders during the project life cycle depicts the strategic approach and level of project success. Indirectly, the pattern of key stakeholders' interaction as mapped out by the LACU model also illustrates the characteristic of public building management at different levels of local authorities. In other words, each level of authority has a distinctive pattern of strategic approach. It was found that the higher the level of local authority, the better the performance of the project was and the higher the intensity of interaction among key stakeholders was.

However, this research does not demonstrate capability level of stakeholders that influences the interactions among stakeholders. The justification of project success is based on the historical public building cases and the perception of local public building practitioners.

10.2.2 Sustainability of public building projects at Indonesian local authority context

The impact of strategic approach encourages sustainable practices by key stakeholders individually or collectively. The framework of sustainable dynamic capabilities (FSDC) conveys the sustainable mechanism for public building management in the local authority context. This research depicts the sustainability through practitioners' experiences, strategic management lens and behavioural aspects among key stakeholders (local authority, contractors, and building end-user) during the project implementations. A lesson learnt from public building practitioners (as discussed in Chapter 2) and the strategic perspective from local resources (as discussed in Chapter 3) is that a developed concept of sustainable dynamic capability and an interaction model (Chapter 4,7 and 8) through the critical phases of project life cycle have been delivered to address the research questions.

Sustainability of public building projects can be adopted by local authorities based upon the locally-based characteristics, in terms of human resource skills and expertise capacity, adequate material resources, and local budgetary allocation, and constituent expectations (as discussed in section 9.3.1.). These local characteristics also determine which appropriate strategic approach to gain project success. As conceptualised in section 9.5, sustainability in this research context concerns improved social and economic development, which can be indicated by the value of the project and capacity to achieve an engagement among the key stakeholders to achieve sustainable practices. However, this research has a limited perspective of local authorities as the consultants and design team were in-house. In other words, the client and building design and control team were in the same institution.

In summary, a successful project is defined as a complete project, which fits the local capabilities (i.e. budgetary, project cost, project cash flow, sufficient skilled labourers and experts) and considers the four influencing factors: profitability, adequate

resources, complexity of the project tasks and competitive business environment to address sustainable practices.

10.2.3 A guidance on enhancing sustainable practices in public building management.

Based upon the concept of sustainable dynamic capabilities, this research offers an empirical guidance for local authorities to manage public building projects. The empirical guidance offers a strategic perspective through managerial aspects of public building project. This research successfully demonstrates a new concept of FSDC for public building management to enhance sustainable practices. The implementation concepts of FSDC convey a strategic approach to achieve project success. The strategic approach has been formulated based on the level of local authorities and actors' roles in the construction industry. This research suggests a fresh idea throughout three capability considerations:

(1) Choosing an appropriate managerial style (i.e. bureaucratic or egalitarian) and an organisational process (i.e. project task management, learning and reconfiguration/ transformation);

(2) Asset positions (i.e. technology, complement, financial, reputation, structural or market assets) which are potentially developed in public building industry and contribute to project success;

(3) Identifying significant path dependencies in local public building management.

10.3 Contribution to Knowledge

With the above key findings, this research has contributed to the current knowledge particularly in the strategic management field, local government study (LocGov Study) and methodology in public building management research.

- **Strategic Management**

  A public building project is considered part of a multi-disciplinary field which in reality embodies complex activities, diverse actors, and is sometimes ambiguous (Bettis *et al.* 2014). A theory is employed to perceive and brings a simplification for better understanding, including a theory in strategic management. During 1980-

2013, the topic of strategic management related to the public building management that used and extended the development from the body of knowledge of dynamic capabilities theory. It was identified from less than a hundred seminal works that correlate with key words of this research: local authority, public building, dan sustainability. However, less than half of these selected seminal works are relevant in this research context.

The local authorities have a strategic role to regulate the construction process, and stipulate the building control system for the key stages of design, approval, construction and maintenance. In fact, there are gaps dealing with sustainable practices regarding company profit orientation and the stakeholders' circumstances in the public buildings sector. After more than a decade of reform in the construction industry, there is still limited evidence on the significant implementation of changes resulting from the regulations, let alone sustainable practices achieved by the local authorities. A research on the perception of public building practitioners reveals empirical evidence that practitioners have a similar platform when it comes to dealing with sustainable practices in public building projects, although they are pre-requisites to achieve the sustainable planning into action, by addressing the consistency of the decision-making process conducted by local leaders (Hermawan *et al*. 2013). The conceptual framework and interaction model attempt to fill the gaps with regard to strategic approach in public building projects. Developing theory of dynamic capabilities views is undertaken through core capability logic (Hall and Wolff 1999) in public building projects, where there have been previous seminal works of dynamic capabilities views in the manufacturing industry (Teece, Pisano and Shuen 1997) and in a public health sector as developed by Pablo *et al.* (2007). However, dynamic capabilities in public sector management commonly focus at the firm level (Teece, Pisano and Shuen 1997, Barreto 2010, Pablo *et al.* 2007). The literature review and conceptual framework justify that this research contributes to a new branch of body of knowledge in public sector of building projects at the different levels of local authorities.

- **Local Government Study**

Public building projects provide a contribution to the national construction industry. The diversity of this archipelagic country has forced the Indonesian local building industry to face several problems involving the role of the local authorities. Based on the evidence, the local building projects' performance at the different levels of local authorities has different characters. Moreover, since the new Local Authority regulation No.23/2014 elaborated the governance role based on the different levels of authorities, it means specifically in contributing the sustainable practices, local tasks are inevitable.

The empirical evidence found that fundamental problems of public building management at the local authority level are related with the budgeting priority, the inconsistency of implementation standard code, and public services. However, a successful reform in public building projects is influenced by leadership factors. Dynamic capabilities framework still applies despite the political instability in local authority's context. The readiness of local authorities could be the potential capabilities in governing public building management; therefore, it potentially becomes a source of sustainable advantages. Harmonising role among stakeholders in public building management at different levels of local authorities cannot adopt the traditional managerial approach. A strategic approach offers a fresh idea in local government study with regard to a project success through interaction between local authority, contractors and end-users. Higher intensity of interaction among key stakeholders enhances the likelihood of project success. However, achieving a balance of interaction, in terms of role and responsibility between contractors, local authorities and building end-users, still represents a significant challenge. The analysis suggests that the local authorities, as the client, should take a more proactive role as the problem solver rather than the law-enforcer in the management of public building projects. The case study analysis suggests that local authorities' role in managing public building projects within the context of different levels of Indonesian local authorities as a new strategy of reinventing government as initially developed by Osborne and Gaebler (1992). Separating the roles of local authorities as policy making and service delivery is needed to encourage sustainable practices. This was also justified from the empirical evidence.

- **Methodology**

  The application of framework of sustainable dynamic capabilities (FSDC), and interaction model of LACU to enhance sustainable practices in public building management suggests an empirically based novelty in methodology of construction management domain. The FSDC suggests guidance at the high policy level for local decision makers to enhance a sustainable manner for managing public building project. The research evidence successfully demonstrates the LACU model to depict a new method which corresponds to the stakeholder mapping that considers the qualitative aspect of the building projects goals, dynamic and behavioural aspects of the interactions. The various methods of stakeholders mapping that have been employed were used to identify the pattern of symbolic interactions that influence project performance (Olander and Landin 2005, Morgan 1990). In relation to a proactive fashion within the managerial process, this research evidence suggests inter-relationships between the key stakeholders' roles (individually and collectively) and sustainable performance as a profile for assessment in local public building management.

10.4 Recommendation for Further Research

There are some recommendations made for further research especially in the area of public building management in the local context.

The first recommendation is regarding the need for further research on the procurement method of public building, specifically appropriate strategy approach for the success of a project and the associated policies development. Two aspects for further research:

(1) to identify the problems of national procurement and the root of problematic of unsustainable practice in public building projects, as part of Indonesian State Own Business (BUMN),

(2) In terms of policies, this research will collaborate with theMinistry of Public Work and Settlement to assist in development of policy briefing regarding productivity in construction. This action research has a significant contribution to the accelerating infrastructure development as Presidential Mission

"Nawacita" until 2019 and National Connectivity of Indonesian Archipelago in the future.

Secondly, the diversity of resources in Indonesian islands is both a potential and a challenge for the development of the construction industry in the area of local authorities. Disparity of natural resources and human resources between regions is prevalent in Indonesia. In the future, this research will conduct two actions research:

(1) Research of preparation of databases or tools in Construction Supply Chain, particularly in three aspects of construction productivity: Man (supply of man-power), Machine (i.e. distribution of heavy machine such as tower crane, bulldozer and other equipment), Materials (i.e. distribution of sand, cement and other materials). This research will support the local authority as the basis of construction industry policy making. The tools will help the local authority to achieve the accountability issues and effective and efficiency in terms of decision making during project lifecycle.
(2) Research on Registry System of skilled labour and expert labour in construction industry. In line with the spirit of dynamic capabilities view, particularly in path dependency, this research will support the technical department in local authorities. This research also collaborated with IT (Information Technology) expert and procurement experts.

Thirdly, the institution to empower construction industry in local regions has not yet been aligned with the system in bureaucracy; this has a quite significant influence to the development of public building projects institution. The research project concludes that the strategic, constituents response on local authority context has a significant role in the performance of a project. In the future, this research will conduct a further research regarding "Reinventing Construction Industry" to achieve sustainable construction Industry. During this research, researcher will conduct serial meeting with Focus Group Discussion regarding crucial issues in local public building. In collaboration among Diponegoro University with the Ministry of Public Works and Settlement and local government in Java and Outer Java, this research will promote sustainable public building throughout three activities:

(1) Socialisation of Safety and Competency in Construction by University Voluntary Programme in Diploma or Technical High School (*SMK, Sekolah Menengah Kejuruan*).

(2) Conducting some Engineering short courses for superintendent (field project supervisor), procurement unit and technical department at local authorities. Serial course means the regular activities with local government. This programme is initiated as the capacity building among stakeholders in construction industry.

(3) Inviting some building practitioners at public lecture in University and creating collaborative activity such as institutional link with construction stakeholders in local authority. The pilot project will start in Semarang City on Resilience City Project in the next five years.

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Appendices

Appendix 2- 1. Output Statistic Analysis Practitioners Perceptions Study

Data Simulation

N valid = 10 , r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%)

Output of Simulation
Simulation Variable Social Pillar

Conclusion: Cronbach's Alpha = 0.630 < r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%) NOT RELIABLE, check item variable and re-running.

After many times trial,

Reliability Statistics

Cronbach's Alpha	N of Items
.811	4

Conclusion: Cronbach's Alpha = 0.811 > r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%) RELIABLE.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Improve the quality of human (secure and adequate consumption of basic needs) by poverty alleviation.	11.5000	9.167	.853	.676
Planning Adaptability with local human institutions and technology	11.8000	8.622	.784	.688
Concern and implemetation the skill of people who participate in a project	11.7000	10.011	.397	.886
Equitable distribution of the social benefits of construction and, where this is not achieved in the intended use of a facility, seek to optimize benefits which arise during the construction process, such as employment opportunities.	12.1000	9.433	.583	.784

Simulation Variable Economy Pillar

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.561	5

Conclusion: Cronbach's Alpha = 0.561 < r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%) NOT RELIABLE, check item variable and re-running.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Ensure financial affordability for intended beneficiaries by reducing the overemphasis on technical sustainability. For example, appropriate sets of minimum housing and associated service standards need to be developed to promote the acquisition of afford	12.6000	18.267	-.035	.706
Promote employment creation and, in some situation, labour intensive construction for disadvantaged communities as this should result in a significant portion of the nancial contribution of a project remaining and circulating in local hands.	13.0000	14.222	.395	.465
Use full-cost accounting and real-cost pricing to set prices and tariffs, for goods and services, that fully reflect social and biophysical costs. This seeks to achieve more equitable development and more efficient use of resources.	12.9000	18.989	-.012	.654
Enhance competitiveness in the market place by adopting policies and practices that advance issues of sustainability. For Example, reducing price or other beneficiary point when customer bring their own bag for shopping, or incentive/reward for applying g	13.3000	10.233	.778	.182
Choose environmentally responsible suppliers and contractors who can demonstrate environmental performance.	13.4000	10.933	.661	.268

After many times trial,

Reliability Statistics

Cronbach's Alpha	N of Items
.803	3

Conclusion: Cronbach's Alpha = 0.803 > r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%) RELIABLE.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Promote employment creation and, in some situation, labour intensive construction for disadvantaged communities as this should result in a significant portion of the nancial contribution of a project remaining and circulating in local hands.	5.9000	9.656	.386	.967
Enhance competitiveness in the market place by adopting policies and practices that advance issues of sustainability. For Example, reducing price or other beneficiary point when customer bring their own bag for shopping, or incentive/reward for applying g	6.2000	6.178	.829	.525
Choose environmentally responsible suppliers and contractors who can demonstrate environmental performance.	6.3000	6.233	.790	.570

Simulation Variable Environment Pillar

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.782	9

Conclusion: Cronbach's Alpha = 0.782 > r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%) RELIABLE, but check item variable if Cronbach Alpha per item < r product moment and re-running.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Inovation of resource-savings methods to meet human needs. For example, innovation material to reduce the electricity consumption in building construction.	24.2000	53.067	.366	.775
Reduce the use of the four generic resources used in construction, such as energy, water, materials, and land, at each stage in the project life cycle.	25.0000	46.222	.641	.733
Maximize resource reuse, and/or recycling as this leads to a reduction in waste thereby prolonging the life of landfill facilities and reducing the need to select new landfill sites. It also reduces the need for raw materials thereby contributing to the a	24.9000	47.878	.612	.739
Recycling (reduced to raw materials and used in new products). Example: On the construction site, recycling requires educating workers about recycling procedures and instituting on-site sorting of usable waste into bins clearly marked for different types	25.2000	53.511	.565	.755
Use renewable resources in preference to nonrenewable resources. This principle can be applied to both building materials and energy. Example: For energy: passive thermal design to generate energy. Passive thermal design obtaining indoor thermal comfort	25.3000	47.567	.646	.734
Minimize air, land and water pollution for global concerns, it can include the reduction or elimination of pollutants causing ozone depletion and global warming. At a local level, it requires the development of operational procedures for controlling va	24.8000	52.400	.432	.766
Create and using the Eco Friendly product in construction, in regard human safety and healthy and minimizing/protection the environmental degradation.	24.9000	51.878	.331	.785
Conservation Efforts by conserving life support systems, conserving the biodiversity of plants, animals and other organisms,minimizing damage to renewable resources (soil, organisms, forests, rangelands, cultivated land, and the marine and freshwater ecos	25.3000	48.233	.705	.729
Minimize damage to sensitive landscapes, including areas which are valuable from a scenic, cultural, historical, or architectural point of view, and minimize intrusion into wilderness areas.	24.4000	60.267	.036	.817

Some items not reliable, need adjustment. Thus, the item which not reliable must be deleted, then running test again. Hence, the outcome of simulation as follows:

Reliability Statistics

Cronbach's Alpha	N of Items
.816	7

Conclusion: Cronbach's Alpha = 0.816 > r product moment = 0.632 (alfa = 5%), 0.765 (alfa= 1%) RELIABLE

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Inovation of resource-savings methods to meet human needs. For example, innovation material to reduce the electricity consumption in building construction.	17.5000	38.278	.377	.823
Reduce the use of the four generic resources used in construction, such as energy, water, materials, and land, at each stage in the project life cycle.	18.3000	32.233	.671	.770
Maximize resource reuse, and/or recycling as this leads to a reduction in waste thereby prolonging the life of landfill facilities and reducing the need to select new landfill sites. It also reduces the need for raw materials thereby contributing to the a	18.2000	34.178	.609	.783
Recycling (reduced to raw materials and used in new products). Example: On the construction site, recycling requires educating workers about recycling procedures and instituting on-site sorting of usable waste into bins clearly marked for different types	18.5000	38.056	.645	.786
Use renewable resources in preference to nonrenewable resources. This principle can be applied to both building materials and energy. Example: For energy: passive thermal design to generate energy. Passive thermal design obtaining indoor thermal comfort	18.6000	35.378	.548	.794
Minimize air, land and water pollution for global concerns, it can include the reduction or elimination of pollutants causing ozone depletion and global warming. At a local level, it requires the development of operational procedures for controlling va	18.1000	38.989	.366	.823
Conservation Efforts by conserving life support systems, conserving the biodiversity of plants, animals and other organisms,minimizing damage to renewable resources (soil, organisms, forests, rangelands, cultivated land, and the marine and freshwater ecos	18.6000	33.822	.754	.759

Appendix 5- 1 Audit trail

Respondent Profile

No	Respondent Code	Date of interview *)	Job role of practitioners	Experience range in engineering field (years)	Role as Stakeholder (LA-C-U)
1	TM01	28 July 2013	Contractor, Project manager	10-15	C
2	TM02	25 July 2013	Contractor, Site engineer	10-15	C
3	TM03	26 July 2013	Contractor, Operational manager	10-15	C
4	TM05	23 August 2013	Subcontractor of structure	10-15	C
5	TM06	05 September 2013	Building user (Market Trader)	-	U
6	UB01	14 August 2013	Procurement unit	15-20	LA
7	UB02	14 August 2013	Procurement unit	More than 25	LA
8	UB03	13 August 2013	Building user (head of department)	-	U
9	UB04	15 August 2013	Local authority (dean)	15-20	LA
10	UB05	16 August 2013	Technical team (civil engineer)	15-20	LA
11	UB06	29 August 2013	Local authority (former dean)	More than 25	LA
12	UB07	29 August 2013	Technical team (civil engineer)	15-20	LA
13	UB08	29 August 2013	Building user (head of department)	-	U
14	BI01	15 August 2013	Building Investigator (structure engineer)	More than 25	LA
15	BI02	15 August 2013	Building Investigator (project management)	15-20	LA
16	BI03	15 August 2013	Building Investigator (structure engineer)	15-20	LA
17	BI04	16 August 2013	Building Investigator (architect)	More than 25	LA
18	BI05	16 August 2013	Building Investigator (project manager)	15-20	LA
19	BI06	16 August 2013	Building Investigator (geotechnic, proj. manager)	More than 25	LA
20	BI07	16 August 2013	Geotechnical engineer	10-15	LA
21	BI08	29 August 2013	Building Investigator (architect)	20-25	LA
22	BI09	05 September 2013	General contractor	20-25	C
23	BI10	17 August 2013	Structural engineer	More than 25	LA
24	BI11	19 September 2013	Architect, construction service development board	More than 25	LA

*) Each date of interview accompany by consent form, transcript in original language, voice recorded (confidential document, cannot be presented in this appendices due to ethics issues)

Appendix 5- 2 Interview Topic Plan

Respondent type 1 : Construction Firm management/ Procurement Unit/ Government/ Other building's practitioner (Engineer/ Construction Board)

1. Introduction to the topic (5 minutes)
2. Perception of Sustainable Construction (10 minutes)
3. Strategy for successful projects (15 minutes)
    - Internal factors:
        - organisational structure
        - experiences
    - External factors:
        - market influence (larger / smaller firms)
        - regulations
        - local government

Respondent type 2 : NGO/ Independent party

1. Introduction to the topic (5 minutes)
2. Perception on Local Government Building Projects (around 25 minutes)
        - Regulation
        - Stakeholder capacity
3. How sustainable the buildings so far? (Social-Economy and Ecological perspectives)

Respondent type 3 : *Stakeholder (User/ Vendors)* (around 30 minutes)

1. Perception of building occupant

    - Experience of using building
    - Comparison before and after
    - Impact of new building

2. Social perspectives on using new building

Appendix 6- 1 Interview Transcripts (English Version)-Specimen

TRANSCRIPTS FIELD RESEARCH INTERVIEW (ENGLISH VERSION) Atlas Ti database

CASE STUDY 1
TM01 (RKC)

F: How to success the strategy of revitalisation project of Kelapa Gading Market Jakarta? What factor affecting its success ? How was your experience in controlling the organization structure from beginning to final of the project?

R: The fact is on the beginning of the company's establishment we do not intend to take this KGM project but Anchor infrastructure projects. But, since there is me and Mr. Sam, who already had the experience, there is an opportunity for us to handle this KG market. The first reason is based on the fundamental experience. So Mr. S had confidence with his experience, and I also have a lot of experiences, especially with technical matters, so we take this KGM project. Based on our experience we think it is easy, it would be easier for us to observe. When we offered this market project to an inexperienced one, they would be difficult to sort out, which market is good or bad.

So based on the experience we already have, we immediately know that KGM is a great project. Even though we have difficulty on the price, where the price of construction costs of the market that will be revitalised will be charged to merchants. Price is determined not cheap but very cheap or virtually lacking. For example in other markets such as Koja Market, los market price of 13 million per square meter. It was not the cost of the building, but the fees charged to merchants. But, KG market is only cost for 8.5 million/m^2. While the market stalls of Koja could reach for 15 million per square meter, and our stall at Kelapa Gading Market project only 10.5 million per square meter, the price difference is quite far right?.

However, we believe that if there is no one has the experience, yet no one dared to handle this project. And, it actually happened. In KGM project, we became the umpteenth developer. It could be asked to Mr. H, maybe we became the sixth or more, because a lot of them retreat this project, due to that factor.

So, the first stage of the project we have to calculate the business plan of KGM. Everywhere not only for a large project such as KG we should have BP, even for selling

meatballs for sure. We calculate the cost-benefit. First we calculate the amount of income from 228 market merchants. From that amount, we calculate the stall needs; the breadth multiplied by the area per square meter, and then obtained the price per unit. Unfortunately, it cannot cover the construction cost then we increase the number of stalls for new merchants. So overall, it becomes 333 stalls, either for new and old merchants. We assume that new merchants get their stall for 13 million per square meter, stall 15 million per square meter; we have calculated all and gained nearly 15 Billion.

Well, start from it we separated, which is for the physical and non-physical expenditure (NF). The physical expenditures including physical building, TPS building (Temporary Shelter for merchants) and permanent construction. Permanent construction includes architects, structural and Mechanical Electrical (ME). Non-Physical includes socialization to the merchant; we pay the supervision's cost, cost of planning consultant, and notary fees.

We pay all sorts and after we calculate based on our previous experience, it acquired a certain margin. For physical value, we can try to press it, but Non-Physical value there is an existing standard regulation cost, such as the percentage of cost monitoring of total building. From the calculation of BP we obtained small margin, if compared to our previous technical experience in Kedoya and Palmerium market, we ultimately believe that this project reliable.

Mr. S already has experience in Pasar Jaya, and finally we take this KGM project. Internally, we formed a team and we already know the person who will be involved in this project. Actually, we involved any experienced person for this project, as Mr. J, SE, US and SU, who have an engineering background. We have Y and N to get in touch with merchants. Finally, we run the project which assisted by Mr. H, until now.

F: Basically, how was the setting composition or organization in the field?

R: Well, actually according to the certificate of incorporation, I as prime director, Mr. H as a director, and Mr. S is out of the project. However, the recent boss is Mr. S. Mr. N is responsible for funding. Mr. N instructs Mr. S to oversee and ensure KGM project running well. While my job is coordinating to PD. Pasar Jaya, to lobby and meeting the client, and Mr. H was related to technical matters, managing employees of the company internally and dealing with KG market merchants. We also have business and technical

divisions led by Mr. J, assisted by SE and supported by IW, TR, and SU. SU as the project draftsman.

F: Do they have Engineering Background?

R: Basically they do, like Usep, for example, He took Bachelor degree in Economic but he experiences in holding engineering purchasing task so he understands his job. Toro, used to be a skilled laborer then being a co-site engineer, and Setiawan as Site manager. Yudi is the busiest, he arranges Kelapa Gading project logistic to ensure the availability of the materials.

F: Is (Yudi) also responsible in finding material if it's out of stock or rarely in town?

R: SG is the draftsman, and Mr. Jatmiko is the person in charge of everything. Mr. Jatmiko is implementor, who interprets the image that will be implemented in the field, scheduling and reporting the result to Mr. H and me.

SET as the site manager assisted by Toro, in charge of receiving Mr. J's technical instruction for field implementation. N and Y as business division. Honestly, as a provider of market building construction project, I think that we do not need a lot of personal but efficient organization. This project has clear buyer such as their old customer. In another provider, they make marketing division on their project organization. However, in KGM project, a business division serves as marketing division to reduce the budget. Yudi as merchant's collector, urgent letter expedition from PD Pasar Jaya, while Nova as administration in charge of calculating the income and expenditure during revitalize development project of KG market building.

F: If marketing function had been done by business division, how was marketing function in this project?

R: Business divisions serve as marketing.

F: So they do double job on its implementation?

R: Actually yes, because 288 of the 333 stalls have particular buyer, so the marketing function does not require a lot of human resources, as it sold slightly. The rest of the stalls just around 50s, and if we sell the merchant using marketing division it is redundant.

Some characters of existing merchant in the market who want to buy the stall are they who also had long inhabited there. First type is merchant who left their business to their brother, relatives, or son. The second type is merchant, who appears as status increases,

or it could be someone who had a contract / lease before then can have their own. The third is buyer around the market location, because they are interested in seeing the market potential, which is starting to increase. Sometimes there is a question "'is there any interest from outside project site? Yes, but very little". People have a tendency, they want to invest, and they buy it then rent it to others. However, somehow we do not want anything like that happen to this project.

We want to live our market. Based on our experience, people buy a stall/place of business just for investment, and some market projects are not prioritized old customer, which resulted into a dead market activity.

In KGM project, there is only one. Since the beginning, we sell stall units in a tight selection. There is a kind of potential buyer's interest (See Photo Documentation). The form is filled in on their goal to buy a place of business. If the business unit will be sold again / for investment, so it is not included in the list of our priorities. Our main priority is the merchants who aim to improve the status of the rent to be the owner; the reason was that they already had a definite market or particular customers.

F: Based on the company's internal organizational structure of KGM project, it means there was previous experience that led to this management as applied (at the moment). Learning from which project if may I know?

R: We have a lot of experiences; the most important experience is the determination of stall's number. If we develop the market never place a new order exceeds the amount of the old order. For instance, Santa Market, from 400 units of stall to be nearly twice now revitalised.

F: Oh, so that's the case?

R: Therefore, project experience of Santa market, Palmerium, and Kedoya become learning for the next project. It turns out that the purchase of a business unit (Lot and Stall) at existing market project has a climax. At a particular level such as a speedometer, there is a limit. However, this condition is different from the case when we build the Mall, such as Taman Anggrek Mall, Central Park, and Citraland. Mall building will maximize its business units, more buyers, and more expensive price will be more competitive market character. We were not so, because of our limited market segment. As I explained before, we may not sell the business unit in KG market to other areas, such as West Jakarta or East Jakarta. This is a local project, and region restriction

is exists. If people consider KG market is excellent but discuss it in Kedoya location, it will not be sold, people are not interested. Another example is in Santa Market, the location is strategic and surrounded by strategic place and close to Blok M so it is difficult to trade there.

The second problem is how to sort the buyer of business unit, they must be distinguished whether for investment, will re-sell, as a broker or just for fun / just kidding. Merchants are the heart of the market, those who turn market activity. So, we have to keep the old merchant, we should not be arrogant by kicking them out of the market. Once again " Merchants is the market's soul" . Now, if a trader is the life of this project, then we subtract them change the investment to them who dare to buy inexpensive price, but we've learned from the event of SM Market. Developer been misguided, it turns out the front business unit not intended for long/ early merchants, all are new merchants. Business unit that is in the front of Santa market, hold by marketing. When people will buy, marketing speculate to raise prices. Marketing tried to play the price to obtain the highest possible price. However, this become backfired and at the individual level are not removed or sold.

Finally, when soft opening, public already knows those business units at front have not been sold. When there are people who are interested, the marketing forgot that there was market saturation point. This is a precious lesson in this business.

This phenomenon can be likened to a parabolic graph, there is a peak position. Soft launching is the golden age. So the peak position is a good time to sell. Take it off to the buyer and the buyer will come.The market will be successful or not, all of it is in 'momentum position'. If the momentum was right, but when anti-climax is not used, it will be dropped. For example, when you start installing the roof construction, people will see it already stands, so marketing should begin move and sell. When it is nearly Soft Launching business unit should be released immediately, when it is already launching, we have to make an announcement and business unit should be marketed. But, it is not happening in Santa Market, when close to soft opening date the business units are still on hold, and the buyer still quiet. It turned out that the unit was still being held by the marketing and a lot of old merchants frozen out because the price offered are too expensive. The old merchant cannot afford it. That is why, when KGM project

makes business unit selling price (Lot and Stall) we are made it at an affordable price for the old merchant.

F: Is there a study conducted to determine the price?

R: Yes it is, we did not do a survey but socialization. PD Pasar Jaya Market tries to communicate about developing market plan from investor to the old customer. They start to open the presale. Although it is only for negotiating, we still need art to handle it and they agreed to the price per square meter. Then based on the business plan the investor obtained ideal price and inform it to the merchant for dealing.

F: Next, is an external factor, what is the most significant factor for this Kelapa Gading project?

R: The first factor, it is a strategic market, crowded or not, alive or not. Do not ever buy a dead market.

F: What is the indicator of life market?

R: Well, we have to observe and survey on it. We have to see the existing of a market, ask for anyone there, and act as a customer sometimes.

Even ask for another customer like "How was the trading situation there, Madam?"

"Oh, the market is complicated, they sold a lack of needed, no fresh fruits and vegetables" such a familiar conversation, that's what we capture.

F: How long was the observation process?

R: The process of observation is executed while we calculated the business plan, and sent a team to undertake field survey.

F: So it takes place in the design process?

R: No, it is not on design process, but in calculating of real business plan process, and we took a month on it. Then we got a shortage of Business plan there.

F: Can we call it pre-design term?

R: It is not a real proper design. So, to make sure about it we saw the first thing in the market, still alive or not, if it is alive, we can see a competitor there, the nearest market to project the site. Do not ever build a market where there is a street vendor in nearby of 2 kilometers, there is another market or there is a mini market (i.e.: Alfamidi or Carrefour) it would be hard. Kedoya market, for example, we took a survey and know that it is crowded but nearby Pesing Market.

F: Is there any influence from another market around KG Market?

R: No, there are only small street-vendors on the side of building when we take our Friday prayer. It is just that much, not too big. The market is alive if it has many buyers. Alive market has a lot of factors. In accordance, the strategic position in the center of the settlement, the market has a lot of customers, and the most important is the attitude of the merchant when socializing. It would be Impossible, although the market is alive or has many buyers, but the merchant is uncooperative, it would be hard. It could have an effect to unplanned of non-physical costs beforehand (Overheat of Non-Physical Costs). Fortunately, all criteria in KGM project are qualified, merchants are very welcome to us.

F: If it relates to external factors that affect the project, there must be regulations that limit the movement of investors in this project related to the license, its layout. So how big is the impact in the implementation?

R: Regulation affects the design process related to the area of land, Building Basics Coefficient (KDB= Koefisien Dasar Bangunan). Actually, the project was designed for one floor but the KDB did not reach 50%, it is only 40%. This led us to change the design into 2 floors. KDB has been established by the government of Jakarta. We adopted it from City Planning office, P2B has set the land for building markets and KDB has been ascertained. The merchants resisted this change at first but eventually they receive after we explained the problems that occurred.

F: Does the negotiation process lasts longer?

R: Fortunately, they are conducive, if it is not it would be hard. They will try to find any mistakes although we are correct. As if that is happening because the merchants complain about the change. We will look as their detriment. The market was like "People who Powerless" , when it entered into media, they (the media) will spice it up and be a big problem.

F: In relation to the Government especially PD Pasar Jaya, how big is the impact on the success of this project?

R: It is having high impact for sure. PD Pasar Jaya is very encouraging, in fact, they are very concern to merchants. They are also concerned at the number of modern shopping centers such as Hypermart. Traditional markets as dead marginalized. There are nearly 200's Traditional market in Jakarta, in muddy conditions and flooded when heavy rain.

The ideal perspective of today's society is a traditional market only visited by maid or housekeeper.

Whereas there have been done comparative study to Singapore, Malaysia or Thailand for Jaya Market project. The market there is nice and neat, why cannot happen in Indonesia? Then PD Pasar Jaya had been presented the result of their comparative study to Local Government of Jakarta (Pemda DKI). Traditional markets can compete with modern market, but the funds are a big deal. Due to budget constraints of Pemda DKI, how was the solution? It cannot be delayed any longer. Our traditional markets are getting left behind. Then we got the concept of investor who led to a dilemma, in another hand market will be better but in the other side investor is "business-oriented" . Then PD Pasar Jaya creates a win-win solution so that merchants do not leave behind, and investors still make a profit in doing the project.

Sometimes government regulations are dynamic. At the beginning of the project, there is no restriction on the number of new merchants, in Santa Market for example. Just for certain markets, such as Tanah Abang Market, there are no problem because of the high demand of business. They made rules in 20% addition of new merchant, but we do not want for KG because it is unbalance. So, we asked for 30% addition for new merchants, because we set/apply cross-subsidies to achieve the BEP (Break Event Point). If the price per square meter for old merchants are only 10.5 million could not cover the cost of implementation, it is set for 15 million per square meter for a new merchant and applies cross-subsidies. The point is a business plan still be implemented.

F: How was the reaction of Pasar Jaya local government as the concept of adding new merchants more than 20%?

R: That was PD Pasar Jaya, which makes investors dizzy (before MBS). Based on our experience there is no problem in MBS, but for an investor who firstly join in the market project is so overburdened because they have calculated carefully. As easier explanation, for instance, KGM project, headed by another investor. For KGM projects, they have prepared 10 billion investments for two years period of business. It is better to run another business if the prices are set-up below the standard market prices. If we did not set our mind like that, what we can afford for a 10 billion investment. At least we spend 3 to 5 Billion, for a total down payment investment. Well, from 5 billion initial

capitals, we can manage it while construction goes. For instance, it is not a big deal if we gain 3 billion for profit because our initial capital is only 5 billion.

F: How was your perception regarding sustainability process in general of KGM revitalization project from the beginning until now?

R: Our expectations are not too high in the beginning. The first relates to the profit margin, that is a natural thing. We obtain the profit margin, although unlike the expectations in the beginning but not too far off the mark. The second relates to personal satisfaction. We think this KGM project is a success. Back to the first view muddy, flooded and slums that became something new like this. Back to the company as well, we feel satisfied. We see KGM project is the pinnacle of success in absorbing knowledge, from Santa, Palmerium, and Kedoya Market. The highlight of our success in applying knowledge to revitalize KG, and we can see, merchants also happy.

F: What is the role of Jaya Market local government in the process?

R: The complexity of this market revitalization project can be seen from the level of merchant's complaint, the buyer and PD Pasar Jaya. The differences are significant enough compared to previous experience of market revitalisation, Santa, Palmerium, and Kedoya market, the complaint rate is almost 80%. While KGM project is less than 10% because the merchant was very cooperative, and not difficult to bill because the market is alive. There are special notes related to the installment payment system by merchants. There are two ways of payment, Hard - Cash and Installments. There are two types of Hard Cash, cash instantly and gradual, timed for 3 months, 3 times cash payments. There is also an annual payment. Especially for merchants who take monthly or annual payments, if they are late or do not pay will get a reprimand. The authorities issued a warning is PD Pasar Jaya; they help us as control functions as well. Answering your question, the function of Jaya Market is also there. If the market is alive, merchants are desperately trying to pay the mortgage because if their stall or market stall of KG repossessed because of late to pay, the queue is already a lot.

If the market is dead, it will be difficult to collect merchant's repayment, who wants to buy? Dilemma when we evict merchants who eventually closed then became a dead market. Actually, I agreed, the maximum addition is 30%. If investors are willing to take profits, they have to take from this 30%. It was perfect condition, if it exceeds it will be more harm than good. If we talk about optimal, based on which side actually?

Merchants are such a pity, PD Pasar Jaya side? It will be back to the ideal. The 30% figure is based on previous experience. 'Stupid' if you did not learn from it. If it should be documented by the local government, many markets are dead after the revitalization, for example, CB market. In the past, the market was alive, now dead, because of its very greedy developers. Developers also bought the land around it, 200% of the initial area. Other examples are Santa market, Palmerium market, and Kedoya market, and many more. If we want to fair, I think KG market is the most successful project in Jakarta, and many agreed including PD Pasar Jaya.

F: Is it because of many experiences mentioned above?

R: Actually, the level of success can be seen as alive or not after the market ended.

F: So it is not about the finished building, but is it work or not after finished?

R: Yeah, right, quite hard to explain.

Table 6-2b. Implementation Method Based on the Dynamic Capabilities Views in Public Building Project in Indonesian Local Authority

Dynamic Capabilities Aspects	Case 1 (Province Level)	Case 2 (Special Authority Level)	Case 3 (Municipal/City Level)
A. Theme five: Managerial and Organisational Process			
(A.5.1.) Coordination/ Integration	-Simple structure of organisation -Coordinate management (egalitarian among team works) -Proportional tasks by each organisation member -Interactive communication (two direction)	-Hierarchical delegating tasks or top down management -Mostly by one direction communication (very few in two way communication approach)	-Reconciliation and harmonious interest among stakeholders in the projects -Legitimation from constituent needs some time predominant in the decision making process.
(A.5.2.) Learning	- Learning from the failure of the previous revitalisation project (references from 3 Traditional Markets) - Social approach to old merchant for approval - Research on location to determine the business plan criteria: alive market, identify the radius of street vendors and the nearby Traditional Market, and economic activities of the existing traditional market. - Business strategy: Public Finance Investment (PFI), Marketing of stalls (included maximum additional stalls)	- Developing pre-qualification document and technical specification guidance from previous experience	-Developing pre-qualification document and technical specification guidance from previous experience -Improvement framework based on investigation experience among public building failures and defects.
(A.5.3.) Reconfiguration/ transformation	- Transformation to new business form - Collaborative business (sub-contracting)	- Investment in human resources by training or courses in special purposes	- Reduce the frequent intervention of local leader by higher authority policy

Dynamic Capabilities Aspects	Case 1 (Province Level)	Case 2 (Special Authority Level)	Case 3 (Municipal/City Level)
		- Time management of occupying the building - Establish the centralised database of services	- Periodical changes of local leader restricted to disturb in the middle of on-going project - Innovation of local authority organisation
B. Theme sixth: Asset Positions			
(B.6.1.) Technological assets	- Adopting precast technology to reduce the execution time or reduce the overhead cost of installing the structural elements. - Used the built-in technology in mechanical-electrical equipment for building supply.	- Developing collaboration with material providers which has technological licenses. For instance, ready mix company, a steel fabrication company, specialist simulation modelling for construction and specialist equipment for construction.	similar with case 2
(B.6.2.) Complementary assets	- Hiring experienced and reputable site- engineers (i.e. Site engineers from high-rise building, marketing staff who has degree from accounting background - Collaborate with specialist engineers which have relevance in building projects.	- Appointing a team leader for technical coordination purposes, supervision and planning activities. - Separation procurement activities in administrative/non engineering works and building projects/infrastructure teamworks	similar with case 2.
(B.6.3.) Financial assets	-Encourage the private sector engagement in public building initiatives	- Developing grand-design financial scheme and umbrella regulation of	-Implementing competitive prices of building construction

Dynamic Capabilities Aspects	Case 1 (Province Level)	Case 2 (Special Authority Level)	Case 3 (Municipal/City Level)
	- Bottom-up management approach to setting up the project goals (i.e. Participatory design: user engagement in formulating a business plan, sounding the feedback and follow-up during pre-construction activities)	construction investment (excludes governmental budget).	projects through the market mechanism under the stakeholder control.
(B.6.4.) Reputational assets	-Identifying and tracing the performance track-record based on employer recommendation and product performance (i.e. Local authority database of contractors' portfolio) -Developing integrated IT system for historical performance works among different level of authorities (central and local levels)	- Implementing pre-requisite the procurement by minimum three months of bank statement prior to the auction date	- Minimise the deviation between estimation, building value and contractor prices - The assess viability of standard price and profit margin in order to stimulate the motivation of building practitioners
(B.6.5.) Structural assets	Collaboration with structure experts, specialist contractors.	-Structuring the staffs into different tasks (administrative and technical or engineering)	- Market segmentation by categorical building project (i.e. Hospital or bank office building has reputable performance in local authority projects). - Scale of project capital investment that influence the contractor case flow.
(B.6.6) Market assets	- Convincing the existing market merchants for	–Ensuring the capacity of buildings are sufficient	-Encouraging local training for skill labours

Dynamic Capabilities Aspects	Case 1 (Province Level)	Case 2 (Special Authority Level)	Case 3 (Municipal/City Level)
	reconciliation the process of revitalisation from business plan to completion stage. - Involving the existing market merchants in the socialisation process of revitalisation among other stakeholders	for academic activities. –Developing a building master plan as a tool for decision making of local leaders. –Establishing a sustainable supply chain of building providers, materials or sub-contractors by internal and external parties –Increasing collaboration with end-user or industry (i.e. Research works, business improvement service, independent investigation, improvement of academic curriculum and human resources support to industry)	-Promoting best practice, health and safety for small construction firms -Technical assistance for regulation making in local institutions or authority
C. Theme seventh: Path Dependencies			
(C.7.1.) Previous investment and business developments	-Diversification business activities	-By sending staff to particular courses of procurement or in-house training -Developing personal development (PD) that integrated with a bureaucratic system. -Reducing the cost of mobilisation and labours -Simplifying of quality control (not just for	similar with case 2.

Dynamic Capabilities Aspects	Case 1 (Province Level)	Case 2 (Special Authority Level)	Case 3 (Municipal/City Level)
		formality report)	
(C.7.2.) Established routines	-Following local building procedures (i.e. SIBP (design consultant permits), IMB (building construction permit), AMDAL (environmental assessment)) -Revisit the previous failures of revitalization activities (by design, socialisation, execution, project documentation and technical assistance to market merchants), and doing corrective action on the current project activities (by improvement strategy to accelerate the process of construction, i.e. long term collaborative with subcontractors and expertise in public building community)	-Balancing the quality control and quality assurance with building specification throughout adequate local budget. -Improvement process of recruitment contractors in terms of specification and assessment guidance	similar with case 2

Appendix 7- 1 Output Analysis Model LACU

7-1.1. Exemplary transcript by key respondents

(TM01, Contractor, Project Manager)

"Well, actually, according to the certificate of incorporation, Me as prime director, Mr. H (anonymous) as a director, and Mr. S (anonymous) is out of the project. However, the recent boss is Mr. S. Mr. N (anonymous) is responsible for funding. Mr. N instructs Mr. S to oversee and ensure KGM project running well. While my job [description] for coordinating to PD. Pasar Jaya. To lobby and meeting the client, and Mr. H's [obligations] was related to technical matters, managing employees of the company internally and dealing with KG market merchants. We also have business and technical divisions led by Mr. J, assisted by SE and supported by IW, TR and SU (anonymous). SU appointed as the project draft-man.

They do, for instance Uje (anonymous), he took a bachelor degree in economics, but his experiences in holding engineering purchasing task, so he understands his job. TR, used to be a skill labour then being a co-site engineer, and SET (anonymous) as Site manager. YU (anonymous) is the busiest, he arranges KGM project logistic to ensure the availability of the materials.

….. SG is the draftsman, and Mr. J is the person in charge of everything. Mr. J is implementer, who interpreting the drawings that will be executed in the field, scheduling and reporting the result to Mr. H and me. SET as the site manager assisted by TR, in charge of receiving Mr. J's technical instruction for field implementation. N and Y as business division. Honestly, as a provider of market building construction project, I think that we do not need a lot of personnel but effective organization."

(TM02, Contractor, Site Engineer)

F: Is there any consideration from previous experience of the personnel?

S: Yes, in the beginning of joining, I start as a surveyor, in three contractors: AKSET, Totalindo and UMAGAI, and all of them are building contractors.

F: So, how many years of experience that you have, in building work field?

S: I became a surveyor since the financial crisis (1998), particularly in civil. But as executor, I concurrently serve as a surveyor and executor as well.

F: Related to the KGM project, what is the most significant experience in this project?

S: The experience in geodetic measurement. We are only given location by PD Pasar Jaya. We were asked to measure from the stakes. We are developing it, after we start, we call the working foremen. The point is a surveyor has an important role in each building. He also who decisive the drawings. Therefore, it is just the satisfaction of working in the building.

F: Related to the previous organization, how important the experience seen by the company?

S: What it is mean? It seems normal the valuation of the company on my work. They look at my experience. Nothing merits.

F: Is it because of your previous job, then they were not asking and consider, as you already know?

S: They just asked my salary because it is important, and necessary. Hahahha (laughing)

F: Then, from the organization in Kelapa Gading's team, if there any part of the work still needed, there should be a part of what?
S: When I joined the MBS, they trimmed it all; the number of employees is 10 or 11. Now warehouse is concurrently, surveyors as well. In a large company, the surveyors and site engineer are separated.
Note: F: Researcher, S: Respondent

(BI02, Local authority, Construction Management)

"The local government has two functions. First, as a local authority that is influenced by electorate, as an executive who manage project budget should be able to accommodate some interests that have higher power. As I mentioned at the beginning if there are 'surrogate' of those who have greater power than the executive so their duties are filling them. Second, administratively in the work, local government implement functions of control optimally refers to the regulation of the project budget. Minimum requirement to execute the building project should be able to meet the target of budget absorption and focus on completion time. The both functions thus are the logical consequence for local government because the construction implementation inherent with the success of budget absorption. Technical issues will affect to project budget issues, so that if those projects are not success, those issues will legally impact to budget users (Pengguna Anggaran/PA)."

(AUB, User, Market trader/Merchant)

"The process is through several developers. The first developer is directly appointed by PD Pasar Jaya. Unfortunately, the price per unit area that been offered not affordable by the merchants, because our merchants come from lower-middle class. Thus, I attempt to stay due to our previous budget-platform been setting-up. Not me, but my team (team 11). We are in the Area of 17 trying to contact Pasar Jaya, but it is not affordable to us then failed. Finally, our team (team 11) were asked to find developers who can relieve the merchants.
First, we search; developers have matched the price, but PD Pasar Jaya, perhaps not matched with their expectation, and merchants plan, rejected [that developer]. Backward again, until I held a meeting with merchants in several times, but could not, because it was not approved. They kept the argument, the image [Design Drawing] that they have agreed. Finally, up to three times failed, but the now developers are fixed in price that we want, they agreed, then approved by PD Pasar Jaya."

(TM01, Contractor, Project Manager)
"The fact is at the beginning of the company's establishment, we do not intend to take this KGM project but Anchor infrastructure projects. However, since there is me and Mr S, who is already, had the experience, there is an opportunity for us to handle this KG market. The first reason is, based on the basic experience. Therefore, Mr. S had

confidence with his experience, and I have a lot of experience, especially with technical matters, so we take this KGM project. Based on our experience, we think it is easy, it would be easier for us to observe. When we offered this market project for an inexperienced one, they will be difficult to sort out, which market is good or bad.
Therefore, based on the experience we already have, we immediately know that KGM is a great project. Even though, we have difficulty on the price, where the price of construction costs of the market [that will revitalize] will be charged to merchants. Price is determined not cheap, but very low or virtually lacking. For example, in other markets such as Koja Market, Los market price of 13 million per square meter. It was not the cost of the building, but the fees charged to merchants. However, KG market is the only cost for 8.5 million/m2. While the market stalls of Koja could reach for 15 million per square meter, and our stall at Kelapa Gading project only 10.5 million per square meter, the price difference is quite far right?"

(UB07, Local Authority, Technical Team)

E: We know that FT (Engineering Faculty) is engaged in education, and then to deal with the specific matter about the projects, especially in this building matter, it seems not focused. So there was only who is willing to work, and took the lecturers (to involve in that project) which actually it is not their duty. That was supposed to do by administration staffs, people who support the work of administration on campus. Therefore, there are staffs of TU (Administration), Head of TU, and... There is a unit that handling about infrastructure problems, both the building and administrative."
F: So, Shall it be separate for being ideal?
E: Not separated inside it, but do not exploit people who (already) has 'double duties'. Therefore, we had many problems of technical team. The technical team been taken from lecturers. Even it is not their duty, but still requested as technical team who supervised the 'consultant and contractor'. In this case, the professionalism of the technical team activity did not demonstrate a significant progress. Due to the technical team [outcome just for] making advices, administrative [work], even it did not matter if the advice used or not. Because many time the problem was in the budget. Although there was a technical team with all advices, but with the constraint factor of the budget executor who could not handle the job then it refers to be consult. The Consultancy was supposed to be professional, but the truth was difficult because value of the projects were small. Therefore, professionalism was not growing, possibly even by using its own technical team as the consultant."
(Note: F: Researcher, E: Technical Team)

(TM05, Sub contractor pre-cast of KGM project)

The parameter is floor to floor speed. Conventional methods are around 6-7 days but we make it 4-5 days faster, though it depends on the lifting plate, it is around 2-5 days floor to floor and it is possible to run faster in the field. For example, while the pile-works have been running, the production of girder and precast column can be started. When the pile work ends, the product could deliver to location after [we] get permission.

There is no architectural problem when it is ready in the element. We can follow the design what architect wants [design]

(UB07/ Technical Team)

Indeed it is from its organisational structure, that the human settlements agency from the head of the agency, involve in the technical team but it was too small. Therefore, a decision have been setting up by head of department or agency who are also included in the technical team. It was also because the head of the agency's power might be too broad, because the burden of his routine works is in all area of Central Java.

(BI07, Geotechnical Engineer)

The way the stakeholders who are involved in the auction process think about a project is not completely wrong. Everyone wants his or her portion. LPSE [e-procurement agency] may think, like, there is a rent fee for their computer, electricity and internet. This thought appears as the component of unallocated cost. Consequently, when they ask the commitment making officials to help manage the project drawing authorisation process to Housing and Spatial Planning agency (Dinas Kimtaru: Pemukiman dan Tata Ruang), the spending cost was more than the standard as it is not allocated initially.

7-1.2. Output Analysis of Model LACU-Speciments

A. Quotations Summary Model Case Study 1

Report: 59 quotation(s) for 3 codes

HU: Dynamic Capabilties in Traditional Market Buildings Jakarta
File: [C:\Users\Toshiba\Documents\Scienti...\Dynamic Capabilties in Traditional Market Buildings Jakarta.hpr7]
Edited by: Ferry Hermawan
Date/Time: 2014-07-10 17:59:38

Mode: quotation list names and references

GROUP CODE	QUOTES ANALYSIS
LA	P 1: ATI_Case study 1_CODING.pdf - 1:218 [There are a lot of players for..] (19:1411-19:1721) Codes: [LA] There are a lot of players for building, for example the government flats project of the ministry of public housing (MENPERA) and copyrighted work. In such a project, according to IICPA (Association of Precast Indonesia) there are many types of precast modelling, they have a license, has a system or method. P 1: ATI_Case study 1_CODING.pdf - 1:188 [Regulation affects the design ..] (6:1632-6:1855) Codes: [LA] Regulation affects the design process related to the area of land, Building Basics Coefficient (KDB=Koefisien Dasar Bangunan). Actually the project was designed for one floor but the KDB did not reach 50%, it is only 40%. P 1: ATI_Case study 1_CODING.pdf - 1:190 [PD Pasar Jaya is very encourag..] (6:2761-6:2966) Codes: [LA] PD Pasar Jaya is very encouraging, in fact they are very concern to merchants. They are also concerned at the number of modern shopping centres such as Hypermart. Traditional markets as dead marginalized. P 1: ATI_Case study 1_CODING.pdf - 1:191 [PD Pasar Jaya had been present..] (7:298-7:537) (Super) Codes: [LA] PD Pasar Jaya had been presented the result of their comparative study to Local Government of Jakarta (Pemda DKI). Traditional markets can compete with modern market, but the funds are the big deal. Due to budget constraints of Pemda DKI, P 1: ATI_Case study 1_CODING.pdf - 1:220 [The standard of concrete quali..] (22:1208-22:1675) Codes: [LA] The standard of concrete quality in technical specification that usually

GROUP CODE	QUOTES ANALYSIS
	chosen is K250 (K representing concrete characteristics standar which value 250 kilograms per centimetre square), but concrete quality for pre-cast is K350 to achieve the material cycle time. So, the condition impaced to pre-cast material price. The dilemma is, when we as supplier do not want to follow the existing specification, including price, it makes the implementation ineffective. P 1: ATI_Case study 1_CODING.pdf - 1:221 [Nowadays, infrastructure proje..] (23:434-23:728) Codes: [LA] Nowadays, infrastructure project is booming and use pre-cast spec. For example, river normalization project uses sheet pile product and bridge uses box girder product. We follow market demand and it should have innovation. The development start from there, but the market is already available P 1: ATI_Case study 1_CODING.pdf - 1:222 [If the network only in buildin..] (24:2573-24:3088) Codes: [LA] If the network only in building maybe the market segment will be less than one-tenth only. It depends on local authority. The Local authorities of Jakarta have a programme condominium or apartment totally around hundreds. Another project, for instance Ciliwung project, but the government still holds the control of this business market. Nowadays, infrastructure projects become lead the business at all. During this past two years has focused on the tower construction, in addition to the lecture hall as well. P 1: ATI_Case study 1_CODING.pdf - 1:223 [This market was previously an ..] (25:251-25:689) Codes: [LA] This market was previously an Inpres market (Inpres : Instruksi President/ President's instructed programme), just covered on the roof-top of the building, meanwhile the stalls were underlined below its stalls. Thanks God, this market was classified as a prominent Traditional Market since early established. There were not modern market retails such Alfamart or Indomaret in this environment, and the business situation is still very nice. P 1: ATI_Case study 1_CODING.pdf - 1:224 [A: Individuals who have land t..] (26:918-26:1309) Codes: [LA] A: Individuals who have land then they made such Letting house. The landlords made some stalls over the road side and provided rules afterward. Then, the people are reluctant to enter the market.

GROUP CODE	QUOTES ANALYSIS
	F: Was it after the market has finished or earlier? A: After the market has finished. It's rich people, have a lot of wants. Today, permit problems are easy to arrange. That's what I can tell P 1: ATI_Case study 1_CODING.pdf - 1:197 [The authorities issued a warni..] (8:504-8:854) (Super) Codes: [LA] The authorities issued a warning is PD Pasar Jaya; they help us as control functions as well. Answering your question, the function of Jaya Market is also there. If the market is alive, merchants are desperately trying to pay the mortgage because if their stall or market stall of KG repossessed because of late to pay, the queue is already a lot. P 1: ATI_Case study 1_CODING.pdf - 1:201 [We are only given location by ..] (9:1788-9:1942) Codes: [LA] We are only given location by PD Pasar Jaya. We were asked to measure from the stakes. We are developing it, after we start, we call the working foremen. P 1: ATI_Case study 1_CODING.pdf - 1:209 [Kelapa Gading is the best, bes..] (14:813-14:1089) Codes: [LA] Kelapa Gading is the best, best in term of building, and the administration is completely full. Jaya Market also asked the same. It was not too good, probably because of the governor change. So it needs administration, all of project data are completely, again, it was here. P 1: ATI_Case study 1_CODING.pdf - 1:210 [Because Pasar Jaya had promise..] (15:1704-15:1873) Codes: [LA] Because Pasar Jaya had promised. This is a pilot project by the PT MBS that we will be given another project or construction of other markets, in a great valuable price. P 1: ATI_Case study 1_CODING.pdf - 1:211 [According to Jaya Market, maxi..] (15:2231-15:2525) Codes: [LA] According to Jaya Market, maximum is 20% from the sale price has been agreed which is 9.5 millions/m2 of Pasar Jaya stall is for free. We take from the free stall; we are subject to the new regulations 20 % of total old merchant for maximum. So, we raise the cost of the required by Pasar Jaya P 1: ATI_Case study 1_CODING.pdf - 1:213 [They considered that we alread..] (16:653-16:821)

GROUP CODE	QUOTES ANALYSIS
	Codes: [LA] They considered that we already familiar with the previous project team, which was able to build Palmerium, Santa, and Kedoya Market, so they considered we already know P 1: ATI_Case study 1_CODING.pdf - 1:214 [F: Is there any policies that ..] (16:1462-16:1769) Codes: [LA] F: Is there any policies that rose in the middle of the project? H: At that time, we experienced a roof collapse incident, so it was rather a long process because we have to re- test all kinds of structure. F: In the end it is complete, and technically can be solved. H: Yes it can be resolved to succeed P 1: ATI_Case study 1_CODING.pdf - 1:205 [F: How was the government over..] (11:2028-11:2516) Codes: [LA] F: How was the government oversight process? S: They had technical team and always come. After finished reviewing, we got meeting in the office, they gave advices. We always coordinate with technical team of PD Pasar Jaya. F: Is Pasar Jaya have a technical team? S: They have technical and business team. F: How many personnel are routine to pitch/check? S: 4 to 5 persons. F: Do they have different tasks? S: Yes, we have Mechanical Electrical, especially for technical and design P 1: ATI_Case study 1_CODING.pdf - 1:228 [Maybe it was what have been ap..] (27:2919-27:3090) Codes: [LA] Maybe it was what have been approved by Local authority, investor and team 11. However, we receive it although been protested. Honestly, maybe this is my fate, at least we
C	P 1: ATI_Case study 1_CODING.pdf - 1:170 [Based on our experience we thi..] (2:838-2:1045) Codes: [C] Based on our experience we think it is easy, it would be easier for us to observe. When we offered this market project to an inexperience one, they will be difficult to sort out, which market is good or bad

GROUP CODE	QUOTES ANALYSIS
	P 1: ATI_Case study 1_CODING.pdf - 1:171 [in other markets such as Koja ..] (2:1374-2:1762) Codes: [C] in other markets such as Koja Market, los market price of 13 million per square meter. It was not the cost of the building but the fees charged to merchants. But, KG market is only cost for 8.5 million/m2. While the market stalls of Koja could reach for 15 million per square meter, and our stall at KGM project only 10.5 million per square meter, the price difference is quite far P 1: ATI_Case study 1_CODING.pdf - 1:172 [Well start from it we separate..] (2:2887-2:3321) Codes: [C] Well start from it we separated, which is for the physical and non-physical expenditure (NF). The physical expenditures including physical building, TPS (Temporary Shelter for merchants) building and permanent building. Permanent building includes architects, structural and Mechanical Electrical (ME). Non-Physical includes socialization to the merchant; we pay the supervision's cost, cost of planning consultant, and notary fees P 1: ATI_Case study 1_CODING.pdf - 1:173 [existing standard regulation c..] (2:3510-2:3789) Codes: [C] existing standard regulation cost, such as the percentage of cost monitoring of total building. From the calculation of BP we obtained small margin, if compared to our previous technical experience in Kedoya and Palmerium market, we ultimately believe that this project reliable P 1: ATI_Case study 1_CODING.pdf - 1:182 [KGM project makes business uni..] (5:1527-5:1650) Codes: [C] KGM project makes business unit selling price (Lot and Stall) we are made it into an affordable price for the old merchant. P 1: ATI_Case study 1_CODING.pdf - 1:186 [The observation process is exe..] (5:2776-5:3099) Codes: [C] The observation process is executed while we calculated the business plan, and sent a team to undertake field survey. F: So it takes place in the design process? R: No, it is not on design process, but in calculating of real business plan process, and we took a month on it. Then we got a shortage of Business plan there

GROUP CODE	QUOTES ANALYSIS
	P 1: ATI_Case study 1_CODING.pdf - 1:194 [That was PD Pasar Jaya, which ..] (7:1813-7:2123) Codes: [C] That was PD Pasar Jaya, which makes investors dizzy (before MBS). Based on our experience there is no problem in MBS, but for investor who firstly join in the market project is so overburdened because they have calculated carefully. As easier explanation, for instance, KGM project headed by another investor P 1: ATI_Case study 1_CODING.pdf - 1:195 [Our expectations are not too h..] (7:2813-7:3085) Codes: [C] Our expectations are not too high in the beginning. The first relates to the profit margin, that is the natural thing. We obtain the profit margin, although unlike the expectations in the beginning but not too far off the mark. The second relates to personal satisfaction P 1: ATI_Case study 1_CODING.pdf - 1:202 [Since the project of Palmerium..] (10:1375-10:1747) Codes: [C] Since the project of Palmerium, Mr. Rxxxx memorized it. From the beginning of the project Palmerium, Kedoya and this project, the subcontractor is Gikon. But Gikon ever changed the name of the company in the project of Kedoya but the people in it still the same. Perhaps based on these considerations, so there is no separation of Mechanical/Electrical (ME) contractor. P 1: ATI_Case study 1_CODING.pdf - 1:206 [S: Yes, it is start from previ..] (12:1046-12:2441) (Super) Codes: [C] S: Yes, it is start from previous project, Kedoya, Palmerium; the problem was smell of garbage. F: Do people protest? Or is it already exist since the first time? S: They did it at once but no longer exist. They were denial at first then gradually disappeared. Then Pasar Jaya changed their method, they transported garbage more often or made a closed system such as in malls, but they think it runs to charge more cost. F: If it can be describe, how was the technical side description of this project since the first time before it is built until it is now operating? S: Flood is the main problem of this market before it is built. Their goods were submerged.

GROUP CODE	QUOTES ANALYSIS
	They were enthusiastic to know that their market built. F: So, the most fundamental problem is they lost the flood? S: Yes, next is parking area. The parking area was narrow because of its arrangement. Once constructed, it became wider/quite extensive in three places. F: So, it used to be one floor for the parking area? S: Yes, it was very messy. Now, it is an expansive parking both for car and motorcycle. F: Any other drastic changes side? S: Except of flood, and parking area is cleanliness. Although it is not 100% at least more advanced. There is no mud, and proper security aspect. It used to be a lot of entrance door and the security was in the centre of market but know we changed it to one entrance door. P 1: ATI_Case study 1_CODING.pdf - 1:207 [The market was used wood and a..] (13:369-13:572) Codes: [C] The market was used wood and asbestos at once, because there is no other material but now it uses steel, concrete. They use debris to avoid tarnish at once and now it uses paving block for parking area. P 1: ATI_Case study 1_CODING.pdf - 1:215 [H: I think so, because here in..] (16:1883-16:2088) Codes: [C] H: I think so, because here in terms of price, why traders excited, because we use the old price, as I said earlier, the price is below the market price, then the purchasing power of them are very strong. P 1: ATI_Case study 1_CODING.pdf - 1:217 [The structure of our organizat..] (18:217-18:956) Codes: [C] The structure of our organization regard to our products is pre-cast. Most of the products have been made in the factory. So the organizational structure at the factory has the following composition. There is a head plant, product manager, general supervisor, steel supervisor and implementer. There are also personnel in field such as project manager, logistic, installer and surveyor. Surveyor is very important because pre-cast work requires the determination of coordinate points. There are at least two surveyors. To handle engineering work it was done in the factory including shop drawings. Personnel in charge on the field are only Project Manager. Project Manager has a background in Civil Engineering undergraduate program P 1: ATI_Case study 1_CODING.pdf - 1:219 [What can be proud from our

GROUP CODE	QUOTES ANALYSIS
	pre..] (20:2759-20:2887) Codes: [C] What can be proud from our pre-cast system is precast slab products because our systems can be faster than conventional methods.
U	P 1: ATI_Case study 1_CODING.pdf - 1:185 [We have to see the existing of..] (5:2420-5:2593) Codes: [U] We have to see the existing of a market, ask to anyone there, and act as a costumer sometimes. Even ask to other costumer like "How was the trading situation there, Madam?" P 1: ATI_Case study 1_CODING.pdf - 1:187 [Alive market has a lot of fact..] (6:868-6:1203) Codes: [U] Alive market has a lot of factors, such as the strategic position in the centre of the settlement, the market has a lot of customers, and the most important is the attitude of the merchant when socializing. It would be Impossible, although the market is alive or has many buyers, but the merchant is uncooperative, it would be hard. P 1: ATI_Case study 1_CODING.pdf - 1:198 [If the market is dead it will ..] (8:857-8:1156) (Super) Codes: [U] If the market is dead it will be difficult to collect merchant's repayment, who wants to buy? Dilemma when we evict merchants who eventually closed then became a dead market. Actually, I agreed, the maximum addition is 30%. If investors are willing to take profits, they have to take from this 30% P 1: ATI_Case study 1_CODING.pdf - 1:208 [Actually, they are also very s..] (14:121-14:522) Codes: [U] Actually, they are also very supportive. From existing vendors, also have their own team (Team 11). F: Was it have a big impact on the time of socialization? Is Kedoya project too? S: There are representative of the merchant, just a different name. Each market has it. Representative of meat merchants, coconut merchants, grocery, clothing merchants, merchant of power tools, because it was a lot. P 1: ATI_Case study 1_CODING.pdf - 1:216 [We come and collected the soci..] (17:946-17:1325) Codes: [U] We come and collected the society. We conducted an analysis to minimize

GROUP CODE	QUOTES ANALYSIS
	the impact of construction risks and the reaction of society that do not harm them. If our construction goes well, they will not react. When we are got troubled in construction and effects on groundwater, drilling, waste disposal, noise, it is usually cause a reaction in the community around the project P 1: ATI_Case study 1_CODING.pdf - 1:200 [Actually, the level of success..] (8:2002-8:2086) (Super) Codes: [U] Actually, the level of success can be seen as alive or not after the market finished. P 1: ATI_Case study 1_CODING.pdf - 1:203 [In fact about license, is auto..] (11:1365-11:1512) Codes: [U] In fact about license, is automatically permitted. But if for smoothness, we are going well. It used to be a problem from merchants, price problem. P 1: ATI_Case study 1_CODING.pdf - 1:204 [It is almost half a year to wa..] (11:1643-11:2025) Codes: [U] It is almost half a year to wait for socialization process. The negotiation was continuing, until we made the TPS (Temporary Shelter for merchants). The building supposed to start in 2009 but finally built in 2010. Then all the material costs have gone up, the RAB (Budgeting Plan) has been soaring again, waiting for balance price than start it. Local government always support.
LA-C	P 1: ATI_Case study 1_CODING.pdf - 1:184 [socialization. Local governmen..] (5:1750-5:2120) Codes: [C] [LA] socialization. Local government of Jaya Market tries to communicate about developing market plan from investor to old costumer. They start to open presale. Although it is only for negotiate, we still need an art to handle it and they agreed to price per square meter. Then based on business plan the investor obtained ideal price and inform it to merchant for dealing P 1: ATI_Case study 1_CODING.pdf - 1:192 [Our traditional markets are ge..] (7:595-7:930) (Super) Codes: [C] [LA] Our traditional markets are getting left behind. Then we got the concept of investor which led to a dilemma, in other hand market will be better but in other side investor is “business-oriented”. Then PD Pasar Jaya creates a

GROUP CODE	QUOTES ANALYSIS
	winwin solution so that merchants do not left behind, and investors still make a profit in doing the project P 1: ATI_Case study 1_CODING.pdf - 1:193 [Sometimes government regulatio..] (7:934-7:1441) Codes: [C] [LA] Sometimes government regulations are dynamic. At the beginning of the project, there is no restriction on the number of new merchants, in Santa Market for example. Just for certain markets, such as Tanah Abang Market, there are no problem because of the high demand of business. They made rules in 20% addition of new merchant, but we do not want for KG because it is unbalance. So, we asked for 30% addition for new merchants, because we set/apply cross-subsidies to achieve the BEP (Break Event Point) P 1: ATI_Case study 1_CODING.pdf - 1:199 [The 30% figure is based on pre..] (8:1364-8:1940) Codes: [C] [LA] The 30% figure is based on previous experience. 'Stupid' if you did not learn from it. If it should be documented by the local government, many markets are dead after the revitalization, for example Cibubur market. In the past the market was alive, now dead, because of its very greedy developers. Developers also bought the land around it, 200% of the initial area. Other examples are Santa market, Palmerium market and Kedoya market, and many more. If we want to fair, I think KG market is the most successful project in Jakarta, and many agreed including PD Pasar Jaya
LA-U	P 1: ATI_Case study 1_CODING.pdf - 1:196 [The complexity of this market ..] (7:3548-7:3983) Codes: [LA] [U] The complexity of this market revitalization project can be seen from the level of merchant's complaint, the buyer and PD Pasar Jaya. The differences is significant enough compare to previous experience of market revitalization, Santa, Palmerium, and Kedoya market, the complaint rate is almost 80 per cent. While KGM project is less than 10% because the merchant was very cooperative, and not difficult to bill because the market is alive. P 1: ATI_Case study 1_CODING.pdf - 1:225 [We are in the area of 17 tryin..] (27:297-27:982) Codes: [LA] [U] We are in the area of 17 trying to contact Jaya Market, but it is not affordable to us then failed. Finally, our team (team 11) were asked to find developers who can relieve the merchants. First we search, the price has

GROUP CODE	QUOTES ANALYSIS
	been matched with the developers, but rejected by Jaya Market local government perhaps not matched with Jaya Market and also merchants plan. Backward again, until I held a meeting with merchants in several times, but could not because it was not approved. They kept the argument, the image that they have agreed. Finally up to 3 times failed, but the now developers are fixed in price that we want, they agreed, then approved by Jaya Market local government.
LA-C-U	P 1: ATI_Case study 1_CODING.pdf - 1:226 [Approximately one year, becaus..] (27:1732-27:2257) Codes: [C] [LA] [U] Approximately one year, because it fits with the investor. It is hard to make the deal. Then the investor willing to work with less loss guaranty because the local government feel sorry for the condition of the merchant. The project finally done as deal with PD Pasar Jaya with the last investor. The local government promised to investor of Kelapa Gading project if the work is successful, so some market jobs will be given to the them (MBS company). This is their first step in associated with Pasar Jaya
C-U	P 1: ATI_Case study 1_CODING.pdf - 1:183 [So the peak position is a good..] (5:613-5:864) (Super) Codes: [C] [U] So the peak position is a good time to sell, take it off to the buyer and the buyer will come, the market will be successful or not, all of it is in 'momentum position'. If the momentum was right, but when anti-climax is not used, it will be dropped. P 1: ATI_Case study 1_CODING.pdf - 1:189 [Fortunately, they are conduciv..] (6:2247-6:2606) Codes: [C] [U] Fortunately, they are conducive, if it is not it would be hard. They will try to find any mistakes although we are correct. As if that is happening because the merchants complain about the change. We will look as their detriment. The market was like "People who Powerless", when it entered into media, they (the media) will spice it up and be a big problem P 1: ATI_Case study 1_CODING.pdf - 1:227 [In quality satisfied, but the ..] (27:2341-27:2856) Codes: [C] [U] In quality satisfied, but the shape of the building is not, in accordance with the original plan that has been agreed. I mean, vegetable stalls, fish stalls, meat stall, surrounded by staple stalls. The big bazaar stall should be in the middle. It turned out that because I did not understand the design-drawings, and we, team 11 very trust the investor, we do not consider. And It turns out

GROUP CODE	QUOTES ANALYSIS
	the building like this, that directly facing onto the street was nice, but this is not good enough. People just pass by

B. Result of Simulation LACU Model

Case Study 1

Phase 1, Conceive (C)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Gather data			1	1	0.9	1			0.1	0	1			0.1	0.9
2	Identity need			1	1	0			1	1	0			1	1	0
3	Goals			1	1	0			1	1	0			1	1	0
4	Practicality			1	1	0.9	1			0.1	0.4		1		0.5	0.5
5	Economics			1	1	0.5		1		0.5	0.5			1	1	0
6	Resources	1			0.1	0	1			0.1	0	1			0.1	0
7	Strategies			1	1	0.9	1			0.1	0.9			1	1	0
8	Risks			1	1	0.5		1		0.5	0.5			1	1	0
9	Alternatives		1		0.5	0.4	1			0.1	0.9			1	1	0.5
10	Selling		1		0.5	0.4	1			0.1	0	1			0.1	0.4
11	Approvals	1			0.1	0.9			1	1	0			1	1	0.9
	Total		2	2	7		6		2	3			3	1	7	
	Intensity		0.18	0.18	0.64	8.20	0.75	0.55	0.18	0.27	4.60	0.42	0.27	0.09	0.64	7.80	0.71

Phase 2, Develop (D)

Code	Task Activities	C						LA					U				
		L	M		H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5		1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Feasibility				1	1	0.50		1		0.5	0.5			1	1	0
2	Rationale				1	1	0.50		1		0.5	0.5			1	1	0
3	Tactics				1	1	0.90	1			0.1	0.4		1		0.5	0.5
4	WBS		1			0.5	0.00		1		0.5	0.4	1			0.1	0.4
5	Project team				1	1	0.50		1		0.5	0.5			1	1	0
6	Schedule				1	1	0.00			1	1	0.9	1			0.1	0.9
7	Budget				1	1	0.00			1	1	0			1	1	0
8	Cashflow				1	1	0.50		1		0.5	0.4	1			0.1	0.9
9	Re-assess risks				1	1	0.50		1		0.5	0		1		0.5	0.5
10	Project brief				1	1	0.00			1	1	0.5		1		0.5	0.5
11	Go or No Go				1	1	0.00			1	1	0			1	1	0
	Total		0	1	10			1	6	4			3	3	5		
	Intensity	0.00	0.09		0.91	10.50	0.95	0.09	0.55	0.36	7.10	0.65	0.27	0.27	0.45	6.80	0.62

Phase 3, Execute (E)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Start up			1	1	0.5		1		0.5	0.5			1	1	0
2	Motivate team			1	1	0.5		1		0.5	0.5			1	1	0
3	Technical requisite			1	1	0			1	1	0.9	1			0.1	0.9
4	Work pakages			1	1	0			1	1	0.5		1		0.5	0.5
5	PERT/CPM			1	1	0.9	1			0.1	0	1			0.1	0.9
6	Procurement			1	1	0			1	1	0			1	1	0
7	Execute work			1	1	0.5		1		0.5	0.4	1			0.1	0.9
8	Control system	1			0.1	0.9			1	1	0.9	1			0.1	0
9	Progress reports			1	1	0			1	1	0.5		1		0.5	0.5
10	Forecasting			1	1	0.5		1		0.5	0.4	1			0.1	0.9
11	Resolve issues			1	1	0			1	1	0.9	1			0.1	0.9
	Total	1	0	10			1	4	6			6	2	3		
	Intensity	0.09	0.00	**0.91**	**10.10**	**0.92**	0.09	0.36	**0.55**	**8.10**	**0.74**	**0.55**	0.18	0.27	**4.60**	**0.42**

Phase 4, Finish (F)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Finalise Project		1		0.5	0.5			1	1	0.9	1			0.1	0.4
2	Review and Acceptances		1		0.5	0.5			1	1	0.5		1		0.5	0
3	Trainning		1		0.5	0.5			1	1	0.5		1		0.5	0
4	Settle a'/c's		1		0.5	0		1		0.5	0.4	1			0.1	0.4
5	Transfer responsibility			1	1	0			1	1	0.9	1			0.1	0.9
6	Re-assign team			1	1	0			1	1	0.9	1			0.1	0.9
7	Final report			1	1	0			1	1	0.5		1		0.5	0.5
8	Close-cut			1	1	0			1	1	0.9	1			0.1	0.9
9	Records			1	1	0			1	1	0.9	1			0.1	0.9
	Total	0	4	5			0	1	8			6	3	0		
	Intensity	0.00	0.44	**0.56**	**7.00**	**0.78**	0.00	0.11	**0.89**	**8.50**	**0.94**	**0.67**	0.33	0.00	**2.10**	**0.23**

Case Study 2

Phase 1, Conceive (C)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Gather data		1		0.5	0.5			1	1	0.5		1		0.5	0
2	Identity need		1		0.5	0.5			1	1	0			1	1	0.5
3	Goals			1	1	0			1	1	0.9	1			0.1	0.9
4	Practicality	1			0.1	0.4		1		0.5	0.4	1			0.1	0
5	Economics			1	1	0			1	1	0.9	1			0.1	0.9
6	Resources	1			0.1	0.4		1		0.5	0.4	1			0.1	0
7	Strategies	1			0.1	0.4		1		0.5	0.4	1			0.1	0
8	Risks	1			0.1	0	1			0.1	0	1			0.1	0
9	Alternatives	1			0.1	0.9			1	1	0			1	1	0.9
10	Selling		1		0.5	0		1		0.5	0.4	1			0.1	0.4
11	Approvals	1			0.1	0.9			1	1	0.9	1			0.1	0
	Total	6	3	2			1	4	6			8	1	2		
	Intensity	0.55	0.27	**0.18**	**4.10**	**0.37**	**0.09**	0.36	0.55	**8.10**	0.74	0.73	0.09	**0.18**	**3.30**	**0.30**

Phase 2, Develop (D)

Code	Task Activities	C					LA					U				
		L	M		H	wp	L	M	H	wp		L	M	H	wp	
		0.1	0.5		1		0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Feasibility		1			0.5			1	1	0.9	1			0.1	0.4
2	Rationale		1			0.5		1		0.5	0.4	1			0.1	0.4
3	Tactics		1			0.5		1		0.5	0.4	1			0.1	0.4
4	WBS	1				0.1	1			0.1	0	1			0.1	0
5	Project team		1			0.5	1			0.1	0	1			0.1	0.4
6	Schedule		1			0.5		1		0.5	0.4	1			0.1	0.4
7	Budget				1	1		1		0.5	0.4	1			0.1	0.9
8	Cashflow		1			0.5			1	1	0.9	1			0.1	0.4
9	Re-assess risks	1				0.1	1			0.1	0	1			0.1	0
10	Project brief		1			0.5		1		0.5	0.4	1			0.1	0.4
11	Go or No Go				1	1			1	1	0.9	1			0.1	0.9
	Total	2	7		2		3	5	3			11	0	0		
	Intensity	0.18	0.64		**0.18**	**5.70**	**0.52**	0.27	**0.45**	0.27	**5.80**	**0.53**	1.00	0.00	**0.00**	**1.10**	**0.10**

Phase 3, Execute (E)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Start up			1	1	0.5		1		0.5	0.4	1			0.1	0.9
2	Motivate team		1		0.5	0		1		0.5	0.4	1			0.1	0.4
3	Technical requisite		1		0.5	0.5			1	1	0.9	1			0.1	0.4
4	Work pakages		1		0.5	0.5			1	1	0.9	1			0.1	0.4
5	PERT/CPM			1	1	0			1	1	0.9	1			0.1	0.9
6	Procurement			1	1	0			1	1	0.9	1			0.1	0.9
7	Execute work			1	1	0			1	1	0.9	1			0.1	0.9
8	Control system	1			0.1	0.9			1	1	0.9	1			0.1	0
9	Progress reports		1		0.5	0.5			1	1	0.9	1			0.1	0.4
10	Forecasting	1			0.1	0.4		1		0.5	0.4	1			0.1	0
11	Resolve issues	1			0.1	0.9			1	1	0.9	1			0.1	0
	Total	3	4	4			0	3	8			11	0	0		
	Intensity	0.27	0.36	**0.36**	**6.30**	**0.57**	0.00	0.27	**0.73**	**9.50**	**0.86**	**1.00**	0.00	0.00	**1.10**	**0.10**

Phase 4, Finish (F)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Finalise Project		1		0.5	0.5			1	1	0.9	1			0.1	0.4
2	Review and Acceptances			1	1	0			1	1	0.9	1			0.1	0.9
3	Trainning	1			0.1	0	1			0.1	0	1			0.1	0
4	Settle a'/c's		1		0.5	0.5			1	1	0.9	1			0.1	0.4
5	Transfer responsibility		1		0.5	0.5			1	1	0.9	1			0.1	0.4
6	Re-assign team	1			0.1	0.4		1		0.5	0.4	1			0.1	0
7	Final report		1		0.5	0.5			1	1	0.9	1			0.1	0.4
8	Close-cut		1		0.5	0		1		0.5	0.4	1			0.1	0.4
9	Records		1		0.5	0.5			1	1	0.9	1			0.1	0.4
	Total	2	6	1			1	2	6			9	0	0		
	Intensity	0.22	0.67	**0.11**	**4.20**	**0.47**	0.11	0.22	**0.67**	**7.10**	**0.79**	**1.00**	0.00	0.00	**0.90**	**0.10**

Case Study 3

Phase 1, Conceive (C)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Gather data		1		0.5	0.5			1	1	0.5		1		0.5	0
2	Identity need		1		0.5	0.5			1	1	0.9	1			0.1	0.4
3	Goals			1	1	0.9	1			0.1	0	1			0.1	0.9
4	Practicality	1			0.1	0	1			0.1	0	1			0.1	0
5	Economics			1	1	0			1	1	0.9	1			0.1	0.9
6	Resources	1			0.1	0.4		1		0.5	0.4	1			0.1	0
7	Strategies	1			0.1	0.4		1		0.5	0.4	1			0.1	0
8	Risks	1			0.1	0	1			0.1	0	1			0.1	0
9	Alternatives	1			0.1	0.9			1	1	0.9	1			0.1	0
10	Selling		1		0.5	0.4	1			0.1	0	1			0.1	0.4
11	Approvals	1			0.1	0.9			1	1	0.9	1			0.1	0
	Total	6	3	2			4	2	5			10	1	0		
	Intensity	0.55	0.27	**0.18**	**4.10**	**0.37**	**0.36**	0.18	0.45	**6.40**	0.58	0.91	0.09	**0.00**	**1.50**	**0.14**

Phase 2, Develop (D)

Code	Task Activities	C						LA						U				
		L	M		H	wp		L	M	H	wp			L	M	H	wp	
		0.1	0.5		1		Dc-la	0.1	0.5	1		Dla-u		0.1	0.5	1		Dc-u
1	Feasibility		1			0.5	0.4	1			0.1	0		1			0.1	0.4
2	Rationale		1			0.5	0		1		0.5	0.4		1			0.1	0.4
3	Tactics		1			0.5	0		1		0.5	0.4		1			0.1	0.4
4	WBS	1				0.1	0	1			0.1	0		1			0.1	0
5	Project team		1			0.5	0.4	1			0.1	0		1			0.1	0.4
6	Schedule		1			0.5	0		1		0.5	0.4		1			0.1	0.4
7	Budget				1	1	0			1	1	0.9		1			0.1	0.9
8	Cashflow	1				0.1	0.9			1	1	0.9		1			0.1	0
9	Re-assess risks	1				0.1	0	1			0.1	0		1			0.1	0
10	Project brief		1			0.5	0		1		0.5	0.4		1			0.1	0.4
11	Go or No Go				1	1	0.5		1		0.5	0.4		1			0.1	0.9
	Total	3	6		2			4	5	2				11	0	0		
	Intensity	0.27	0.55		**0.18**	**5.30**	**0.48**	0.36	**0.45**	0.18	**4.90**	**0.45**		1.00	0.00	**0.00**	**1.10**	**0.10**

Phase 3, Execute (E)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Start up			1	1	0.5		1		0.5	0.4	1			0.1	0.9
2	Motivate team		1		0.5	0		1		0.5	0.4	1			0.1	0.4
3	Technical requisite		1		0.5	0.5			1	1	0.9	1			0.1	0.4
4	Work pakages		1		0.5	0.5			1	1	0.9	1			0.1	0.4
5	PERT/CPM	1			0.1	0	1			0.1	0	1			0.1	0
6	Procurement			1	1	0			1	1	0.9	1			0.1	0.9
7	Execute work			1	1	0			1	1	0.9	1			0.1	0.9
8	Control system	1			0.1	0	1			0.1	0	1			0.1	0
9	Progress reports	1			0.1	0.9			1	1	0.9	1			0.1	0
10	Forecasting	1			0.1	0	1			0.1	0	1			0.1	0
11	Resolve issues	1			0.1	0	1			0.1	0	1			0.1	0
	Total	5	3	3			4	2	5			11	0	0		
	Intensity	0.45	0.27	**0.27**	**5.00**	**0.45**	0.36	0.18	**0.45**	**6.40**	**0.58**	**1.00**	0.00	0.00	**1.10**	**0.10**

Phase 4, Finish (F)

Code	Task Activities	C					LA					U				
		L	M	H	wp		L	M	H	wp		L	M	H	wp	
		0.1	0.5	1		Dc-la	0.1	0.5	1		Dla-u	0.1	0.5	1		Dc-u
1	Finalise Project		1		0.5	0.5			1	1	0.9	1			0.1	0.4
2	Review and Acceptances		1		0.5	0.5			1	1	0.9	1			0.1	0.4
3	Trainning	1			0.1	0	1			0.1	0	1			0.1	0
4	Settle a'/c's		1		0.5	0		1		0.5	0.4	1			0.1	0.4
5	Transfer responsibility		1		0.5	0		1		0.5	0.4	1			0.1	0.4
6	Re-assign team	1			0.1	0	1			0.1	0	1			0.1	0
7	Final report		1		0.5	0		1		0.5	0.4	1			0.1	0.4
8	Close-cut		1		0.5	0		1		0.5	0.4	1			0.1	0.4
9	Records		1		0.5	0.5			1	1	0.9	1			0.1	0.4
	Total	2	7	0			2	4	3			9	0	0		
	Intensity	0.22	0.78	**0.00**	**3.70**	**0.41**	0.22	0.44	**0.33**	**5.20**	**0.58**	**1.00**	0.00	0.00	**0.90**	**0.10**

Summary of LACU Model Simulation

Case Study		Phase 1				Phase 2				Phase 3				Phase 4		
1	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**
	Gather data	0.0	0.9	0.9	Feasibility	0.5	0.5	0.0	Start up	0.5	0.5	0.0	Finalise Project	0.9	0.5	0.4
	Identity need	0.0	0.0	0.0	Rationale	0.5	0.5	0.0	Motivate team	0.5	0.5	0.0	Review and Acceptances	0.9	0.5	0.9
	Goals	0.0	0.0	0.0	Tactics	0.4	0.9	0.5	Technical requisite	0.9	0.0	0.9	Trainning	0.0	0.5	0.0
	Practicality	0.4	0.9	0.5	WBS	0.4	0.0	0.4	Work pakages	0.5	0.0	0.5	Settle a'/c's	0.9	0.0	0.4
	Economics	0.5	0.5	0.0	Project team	0.5	0.5	0.0	PERT/CPM	0.0	0.9	0.9	Transfer responsibility	0.9	0.0	0.4
	Resources	0.0	0.0	0.0	Schedule	0.9	0.0	0.9	Procurement	0.0	0.0	0.0	Re-assign team	0.4	0.0	0.0
	Strategies	0.9	0.9	0.0	Budget	0.0	0.0	0.0	Execute work	0.4	0.5	0.9	Final report	0.9	0.0	0.4
	Risks	0.5	0.5	0.0	Cashflow	0.4	0.5	0.9	Control system	0.9	0.9	0.0	Close-cut	0.4	0.0	0.4
	Alternatives	0.9	0.4	0.5	Re-assess risks	0.0	0.5	0.5	Progress reports	0.5	0.0	0.5	Records	0.9	0.0	0.4
	Selling	0.0	0.4	0.4	Project brief	0.5	0.0	0.5	Forecasting	0.4	0.5	0.9				
	Approvals	0.0	0.9	0.9	Go or No Go	0.0	0.0	0.0	Resolve issues	0.9	0.0	0.9				
	Intensity	0.42	0.75	**0.71**	Intensity	**0.65**	0.95	**0.62**	Intensity	**0.74**	**0.92**	0.42	Intensity	**0.94**	**0.78**	0.23
		LA	**C**	**U**		**LA**	**C**	**U**		**LA**	**C**	**U**		**LA**	**C**	**U**
Case Study		Phase 1				Phase 2				Phase 3				Phase 4		
2	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**
	Gather data	0.5	0.5	0	Feasibility	0.9	0.5	0.4	Start up	0.4	0.5	0.9	Finalise Project	0.9	0.5	0.4
	Identity need	0	0.5	0.5	Rationale	0.4	0	0.4	Motivate team	0.4	0	0.4	Review and Acceptances	0.9	0	0.9
	Goals	0.9	0	0.9	Tactics	0.4	0	0.4	Technical requisite	0.9	0.5	0.4	Trainning	0	0	0
	Practicality	0.4	0.4	0	WBS	0	0	0	Work pakages	0.9	0.5	0.4	Settle a'/c's	0.9	0.5	0.4
	Economics	0.9	0	0.9	Project team	0	0.4	0.4	PERT/CPM	0.9	0	0.9	Transfer responsibility	0.9	0.5	0.4
	Resources	0.4	0.4	0	Schedule	0.4	0	0.4	Procurement	0.9	0	0.9	Re-assign team	0.4	0.4	0
	Strategies	0.4	0.4	0	Budget	0.4	0.5	0.9	Execute work	0.9	0	0.9	Final report	0.9	0.5	0.4
	Risks	0	0	0	Cashflow	0.9	0.5	0.4	Control system	0.9	0.9	0	Close-cut	0.4	0	0.4
	Alternatives	0	0.9	0.9	Re-assess risks	0	0	0	Progress reports	0.9	0.5	0.4	Records	0.9	0.5	0.4
	Selling	0.4	0	0.4	Project brief	0.4	0	0.4	Forecasting	0.4	0.4	0				
	Approvals	0.9	0.9	0	Go or No Go	0.9	0	0.9	Resolve issues	0.9	0.9	0				
	Intensity	**0.74**	**0.37**	0.30	Intensity	**0.5**	**0.5**	0.1	Intensity	**0.86**	**0.57**	0.10	Intensity	**0.79**	**0.47**	0.10
		LA	**C**	**U**		**LA**	**C**	**U**		**LA**	**C**	**U**		**LA**	**C**	**U**
Case Study		Phase 1				Phase 2				Phase 3				Phase 4		
3	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**	**Task**	**LA-U**	**C-LA**	**C-U**
	Gather data	0.5	0.5	0	Feasibility	0	0.4	0.4	Start up	0.4	0.5	0.9	Finalise Project	0.9	0.5	0.4
	Identity need	0.9	0.5	0.4	Rationale	0.4	0	0.4	Motivate team	0.4	0	0.4	Review and Acceptances	0.9	0.5	0.4
	Goals	0	0.9	0.9	Tactics	0.4	0	0.4	Technical requisite	0.9	0.5	0.4	Trainning	0	0	0
	Practicality	0	0	0	WBS	0	0	0	Work pakages	0.9	0.5	0.4	Settle a'/c's	0.4	0	0.4
	Economics	0.9	0	0.9	Project team	0	0.4	0.4	PERT/CPM	0	0	0	Transfer responsibility	0.4	0	0.4
	Resources	0.4	0.4	0	Schedule	0.4	0	0.4	Procurement	0.9	0	0.9	Re-assign team	0	0	0
	Strategies	0.4	0.4	0	Budget	0.9	0	0.9	Execute work	0.9	0	0.9	Final report	0.4	0	0.4
	Risks	0	0	0	Cashflow	0.9	0.9	0	Control system	0	0	0	Close-cut	0.4	0	0.4
	Alternatives	0.9	0.9	0	Re-assess risks	0	0	0	Progress reports	0.9	0.9	0	Records	0.9	0.5	0.4
	Selling	0	0.4	0.4	Project brief	0.4	0	0.4	Forecasting	0	0	0				
	Approvals	0.9	0.9	0	Go or No Go	0.4	0.5	0.9	Resolve issues	0	0	0				
	Intensity	**0.58**	**0.37**	0.14	Intensity	**0.4**	**0.5**	0.1	Intensity	**0.58**	**0.45**	0.10	Intensity	**0.58**	**0.41**	0.10
		LA	**C**	**U**		**LA**	**C**	**U**		**LA**	**C**	**U**		**LA**	**C**	**U**

Appendix 7- 2 Construction Firms Regulation

Type of firms	Qualification Construction firms		Project Value limits (2013), in IDR *(1)	Type of Consultant firms	Qualification Consultant firms	Project Value limits (2013), in iDR *(2)
Micro	small	GRADE 1 Personal	<= 100 Million	Micro	GRADE 1 Personal	< = 250 Million
	small	GRADE 1 Company	<= 300 Million			
Small	small	GRADE 2	<= 500 Million	Small	GRADE 2	< = 500 Million
	small	GRADE 3	<= 1 Billion			
	small	GRADE 4	<= 2.50 Billion			
Medium	non-small	GRADE 5	>2.50 to 10 Billion	Medium	GRADE 3	< = 750 Million
Large	non-small	GRADE 6	> 10 to 50 Billion	Large	GRADE 4	unlimited
	non-small	GRADE 7	> 50 Billion to unlimited			

Notes : IDR = Indonesian Currency (Rupiah)

(1) based on Regulation of LPJKN No. 2/2013

(2) based on Regulation of LPJKN No. 3/2013

Appendix 8- 1 Triangulation (English Version)

TRIANGULATION STUDY (Specimen from Prosecutors)

Note:
T01 and T02 (Artifact by Taped recorded and Original Language Transcripts)
T03 and T04 (Via email communications)

T01

H: What kind of indicator that makes a building need to be investigated?
S: First, whether the building was functioning properly, feasible or not, then we compare the value of the building contract and the third is a report of "the public."
H: What do you mean by "the public" here?
S: Public as a "user" or beneficiary of the building, for example if they are as a school, students or the school committee, parents. It could also from society observer from NGO. They find buildings that have been built, but cannot be enabled for its function or the user of the building itself, for example, they found that (the building) was not as expected.
H: Based on the number of cases investigated how many cases have been investigated and finished up to a court decision?
S: In me, for the investigation has not finished yet all
H: How does (the investigation) in another place work?
S: On the average, they have not been using this kind of investigation.
H: From initial investigation into a full investigation what kind of investigator's role in building stakeholder in the region today?
S: If they as a stakeholder, they would have positive responses. Every time we have entered into the investigation, they restored the shortage at that time and used it directly.
H: So it has more positive impact?
S: Yes, although there is still shortage of volume or quality, at least the function in society soon functioned, as a case in Kramat Jati.
H: How did investigator look at the managerial system in the building project in the region based on the last 5 years of experience?
S: The terms of the investigator seeing managerial systems are usually more complicated. It only can be known from the supervising consultant, the user. PPA or KPA may also not understand. Sometimes we see from different language of construction. But it can be explained in general, even at a glance, the managerial system of the building which is understood not just any contractor or consultant.
The managerial is usually in a mess. From some investigations, PPK just does not understand, but maybe if the system is proper, then the system can be explained. It should not construction people who understand.
H: How about the Vision and Mission of Investigator for the building construction in the region?
S: As an investigator, it should be done by the tender or contract involving lawyers, or for example the parties related. Not only between the contract maker, but also the partner must be consulted legally. And the uniformity of perspective in terms of contract law or the rules of construction. For example what if the volume is excessive?

It could be a waste from our perspective; otherwise it will be safe from the construction side. It's a different point of view.
H: It means that in the future, the actors of construction service have been arranged, what do you think Maam?
S: If it is so, (it) may be transparent, would also be an excellent development.
H: Can you give some examples of investigated cases in the region, and explain it why? According to its performance is it excellent or poor?
S: If I see some of what we observed, on average it's poor. For example, in Cipinang Muara, had twice constructions, a health center. It has been built since 2010, should use the elevator, but it turned out to be unfinished. When the construction time is over, it could not be used in 2011, but in 2012, they used it. The form (of the building) is not suitable either.
H: It means that the design or the execution is not satisfied either. So, Is the owner of the project (PPK or PA= Committing Officer or Budget User) also not familiar with the construction?
S: One more addition, from some cases of my investigation, on average almost every KDP does not understand about construction. Public Health Service, cases of 7 health centers; there are not finished for one-year budget of 2010, after I asked for KDP, dentist, general practitioner, they did not know what to do.
H: It means whether the consultant does not provide advice to the official maker of commitment?
S: Maybe they get a certificate as PPK (Committing Officer). But, in an existing building there is specialized knowledge about the progress of construction, such as drawing, terms, they do not know about it.
H: So, is appointed consultant who does not have good quality?
S: Even consultants from government agencies. The consultants do not also give sense/understanding to the PPK (Committing Officer)
H: Does it mean the technical department of public works?
S: Yes correct, it means technical department.

T02
H: What kind of Indication that makes a building need to be investigated?
Z: Indication process usually begins if there is a report from the public or our own finding. If we do the initial investigation and full investigation, the indication usually start with the initial issue. Information from a report about the existence of the initial issues. For instance, if there are those who "play" when determining the winning bidder, or there is a markup of the construction process or several factors such as the building utilization is not maximized. The process has been completed but has not been utilized.
H: Based on the number of investigated cases how many cases are investigated and finished up to a court decision?
Z: This is related to building construction or entirety?
H: Building construction
Z: In the east Jakarta, is in the process of investigation for last years and this year. None has to prosecution. So far, it is still in the process of investigation. There are some cases, if we see from the numbers, it's about 4, but we see from how many suspects. For example this project, there are some who held more accountably. Maybe there is something wrong in the procurement process, (so) we summon the PPK or the job

executor. From the number of buildings, there are about 3 to 4 buildings in East Jakarta district attorney.
H: How does the impact to investigated building after the court verdict? This is related to the experience of Mr. Zul
Z: This means before it. I ever did the investigation, prosecution and prosecute cases relating to the building. I think if the building then became a problem there are some problems and solutions. When at the beginning of the investigation there are some finding "things" that may be a building; its physical shortcomings can be tolerated. If converted into a state loss is not too great, the service provider or the people that we set as a responsible, able to complete or restore, then we ever provide the solution.
H: So there is punishment, and reward
Z: If the problem is too significant then it will be the case. The building will remain as it. There is no change because the parties involved became defendant and they did not have a chance to restore it anymore because they are going to jail. The budget for restoration is too large, there is no chance anymore.
H: What is a form of investigator role for building stakeholders in the region today?
Z: I think the way we speak of law enforcement, in addition to the deterrent effect. When there are "playful" stakeholders, then they will be more aware of the implementation of other projects. For other roles, if there can be a finding that is not too significant, can be fixed, eventually they are aware.

H: How was investigator looked at the managerial system in the building project in the region based on the last 5 years experience?
Z: For managerial experience, we have more aspects in the investigation of building cases. We mostly found their management in terms of the implementation process of procurement of goods and services. So there is a provision for procurement of goods and services as a reference. There are indeed those who do not understand then violated it or because of corruption related to the greed of people. If the terms of the planning and construction management, I cannot entirely explain. Most of the procurement process, many procurement provisions are ignored. While the aim of procurement provision is to assess the qualification of the contractor in carrying out the construction work.
H: It means when it becomes a case, is the average of its poor managerial or what?
Z: Well of course, related to managerial whether the management and supervisory was highly related. The proof is so many cases that we can find, screwed in the process of procurement and so the implementation. In implementation process, it is a lack of supervision. So that problem can, hopefully, be a reference, for example, the Department of Health. They do not understand about construction, while they who are involved in the procurement. How did they supervise the process running well or not, they do not know. Supervising consultant may not act appropriately, then it happened.
H: How were the Vision and Mission of the investigator for building construction in the region?
Z: We in court have some sectors and many activities program. In addition of duty to make a deterrent effect on the construction process in the future, we have Datum areas that are giving law enlightened. By the time of running process, held by the general director, we deliver the provision of the procurement of goods and services. We are also touring in many places.

H: Is it like socialization process?
Z: Yes, that's right
H: Is the socialization between a good management and not, and its consequence?
Z: It's related to corruption, we always emphasize on stage of the procurement process of goods and services which often becomes a weakness that causes people to commit corruption. As it links to the management. Many people are caught in corruption, not because of greed but because of their position, his responsibilities are not carried out, the responsibility was neglected and exploited by others, so entangled as well.
H: Because he is responsible for it.
Z: Because his responsibility has been neglected
H: Can you give examples of investigated cases in the region, and explain why?
Z: It is rather difficult to explain the best performance, because in each investigation we've already had initial issues. Most likely our findings are when the investigation process is always in problematic. We Usually sort incoming reports based on initial issues. Issues and preliminary data they have given. Most of the information we got about the corruption from a report. Report from the people (public), whether that person in an institution that less pleased with the headship. But what made the report was accurate. So we can legally make reconstruction of it as againts the law. How was the worst condition?
H: Do the worst means that it is potential to be the case?
Z: I have handled cases in NTT, even the building does not exist or fictitious.
That is the worst size. There is a tourist development zone as a cultural site, the budget of historical sites has been disbursed, but there isn't any construction.
H: Yes it's clear, I rarely heard.
Z: I can give the information because I am an investigator.

T03 (via email communication)
from: Ferry Hermawan <hermawan.ferry@gmail.com>
to: HE (anonymous)@ymail.com
date: Sun, Apr 6, 2014 at 4:51 PM
subject: Questions about GKU Building case (justification stage)
mailed-by: gmail.com

Assalamualaikum, Mr.HE (anonymous),

I hope you and your family in Indonesia are in great health. I would like to address some questions as a follow-up of the interview in August 2013. After I read some documents and analysis of chronology of GKU cases, there are some points I do not understand, namely about the rationality of GKU projects. For brevity, I detail the points through the following questions:

1. In your view as an architect, is the cost of the building (contract value) already commensurate with the workload experienced by contractors and complexity of design?

2. Why is 'signalement' of capability of the auction winning contractor allegedly not qualified in terms of technical aspects in the tendering process, difficult to withdraw before the announcement of the winner? What is the most influential factor on the technical assessment process? Is it a personal or organisational factor?

3. Was the announcement of the tender and preparation time for the offer quite realistic at that time? Was it logic that within the required time the prospective bidders could prepare technical documents and bidding? Where is the rationality of your explanation?

4. With regard to the future strategy, if the tender process also considers the recommendations from banks regarding the track record of prospective bidder, is it effective according your capacity as an engineer or auction committee?

Those are all questions that still haunts my mind,

I hope your information can sharpen the following analysis. Thank you for your time and consideration.

Warm regards to you and your family in Indonesia. I am waiting for your reply. Thank you

Wassalamulaikum wr wb.

Response:

HE < HE (anonymous)@ymail. com >
4/12/14
To Whom It May Concern
Mr. Ferry Hermawan
Subject: Practical suggestions and alternative answers to the questions

Dear Mr. Ferry,
Here are my answers to your questions.
1) Not yet/not commensurate at all

a) Cost of buildings (HB) = building floor area (the area of the column structure and or overhanging if any) x floor building coefficient (6-storey building = 1,197) x cost of high-rise buildings from the grounds of the project = Rp A, -

b) HPS/OE is the total building cost (construction cost + design consultant fee + survey consultant fee, maintenance fee, inclusive tax: VAT 10% and income tax as regulated).

c) Building cost offered by the contractor starts with the calculation done by design consultants (EE) and then is subsequently analysed by the Committee (ULP). It then results in HPS/OE that must be communicated at the auction.

d) For this project, actually EE had already been manipulated so that the project ran according to the plan. Thus, the HPS of the project was already lower than the real cost in Semarang.

e) It turned out there was a bidder who offered a much cheaper rate than the real price.

In my capacity as an architect and construction manager, I would argue that, based on experience, in order to be able to build a 6-storey building, a contractor then should have built buildings with at least 3-4 storeys. It is related with the aspects of constructability, the presence of elevator, the earthquake impact, and repetitive development onward.

2) It is a matter of principle: the emergence of individual culture in joint-construction, whereas collaboration (partnering maturity: Thompson and sander, 1998) plays an important role. Organizational culture is largely determined by the individuals involved,

and is managed by the capability of the team leader. Therefore, from in terms of competence, when the building to be constructed is 6-storey, then the members of the Committee, in moral conduct, must follow the others who have more experiences. In other word, selecting members of the Committee should be based on competence and track record, and not on personal factors such as friendship and kinship.

3) It is quite realistic for those who are already professional in this field, here are the reasons:

a) Professional contractors must have databases (administrative and technical) that are ready for use through IT server → knowledge management.

b) The calculation of the building and utility costs (Elevator, air conditioning etc.) is indeed already stipulated in Regulation of the Minister of Public Works No. 45/2007 concerning technical guideline for the construction of the State Public Buildings.

4) It is such an excellent question! But it can only support the process if the banks in question are professional, for example: Mandiri, BCA, BNI, BRI, Panin, Danamon (names of banks). For the others (banks), I know nothing and not recommend it to you.

Thank you Mr. Ferry Hermawan, good luck and enjoy your study, bye ....

T04 (Via email communication)

From: "Ferry Hermawan hermawan.ferry@gmail.com
Sender: DSU (anonym)@yahoogroups.com
Date: Fri, 8 Aug 2014 12:46:16 +0100
To: (Anonymous)
Reply To: Anonymous)
Subject: Discussion of Research Results

Asalamualaikum wr wb,
Best wishes to all Civil Engineering lecturers wherever you are.
On this occasion, I beg your help for giving comments related to my research hypothesis test. Your comments will be very valuable from the academic perspective.
In your opinion, which approach is the most ideal one for construction work on buildings in Indonesia in terms of sustainability construction system (Green Construction), particularly in local authority?
A: Business approach that will form a sustainable construction pattern
or
B: Sustainable construction principles that will form a business mechanism

After making a decision, please give logical reasons that underlie your choice.
Upon your willingness to giving comment, I would like to express my deepest gratitude.
May your participation is beneficial. Thank you.

Wassalamualaikum Wr. Wb.
Regards,
Ferry Hermawan

A Representative Response:
8/8/1
JU (anonymous) @gmail.com
Dear Ferry,

The most ideal and realistic option would be B (sustainable construction principles that will form a business mechanism). Sustainable construction principles have become necessary in the future. The increased awareness of stakeholders towards sustainable construction will form by itself a business mechanism as appropriate. B: Principle of sustainable construction will naturally form a. For example, the rising awareness of the owners toward green buildings will create market demand that will in turn establish a business mechanism accordingly. When the sustainable construction principles ultimately arrive at the regulation stage, it will eventually strengthen its business formation mechanism based on the regulation. For instance, local regulation of green buildings in Jakarta surely will create demand (by law), which then will establish a market and its respective business mechanism.

Instead, the approach given in option A (Business approach in constructions form a sustainable construction pattern) is a "business driven" model, which usually applies temporary in line with the current business trends. This model will follow the pattern of "bussiness life cycle" (introduction-growth-mature-decline) that in the end will not last long (not sustainable), except it is a "business driven" model that is successfully regulated until it is coercive. If this happens, the result would be "sustainable" but enforced.

I hope this would be helpful
Greetings
JU (Anonymous)

Appendix 9- 1 Table Summary of Strategic Approach

Table 9-1a. Strategic Approach by Managerial and Organisational process

Dynamic Capabilities View	Level of local authority	Strategic Approach	Strategic method for enhancing success at public building project
Coordination/ Integration	Province	Effective organisation (egalitarian)	-Simple structure of organisation -Coordinate management (egalitarian among team works) -Proportional tasks by each organisation member -Interactive communication (two direction)
	Special Authority	Bureaucratic organisation (top down)	-Hierarchical delegating tasks or top down management -Mostly by one direction communication (very few in two way communication approach)
	Regency/City	Political approach by local leader and parliament parties	-Reconciliation and harmonious interest among stakeholders in the projects -Legitimation from constituent needs some time predominant in the decision making process.
Learning	Province	Strategies of execution in terms of user characteristic and management of project location.	- Learning from the failure of the previous revitalisation project (references from 3 Traditional Markets) - Social approach to old merchant for approval - Research on location to determine the business plan criteria: alive market, identify the radius of street vendors and the nearby Traditional Market, and economic activities of the existing traditional market. Business strategy: Public Finance Investment (PFI), Marketing of stalls (included maximum additional stalls)
	Special Authority	Market research and developing mechanism of procurement.	Developing pre-qualification document and technical specification guidance from previous experience.
	Regency/City	Market research and developing mechanism of procurement.	-Developing pre-qualification document and technical specification guidance from previous experience -Improvement framework based on investigation experience among public building failures and defects
Reconfiguration/ transformation	Province	Changes business activities	-Transformation to new business form -Collaborative business (sub-contracting)
	Special Authority	Changes habits of the occupant	-Investment in human resources by training or courses in special purposes - Time management of occupying the building - Establish the centralised database of services
	Regency/City	Intervention of local leader to the building project institutions	- Reduce the frequent intervention of local leader by higher authority policy - Periodical changes of local leader restricted to disturb in the middle of on-going project - Innovation of local authority organisation

Table 9-1b. Strategic Approach by Asset Positions

Dynamic Capabilities View	Level of local authority	Strategic Approach	Strategic method for enhancing success at public building project
Technology	Province	• Innovation in the project by efficient, effective and transparent execution. • Subcontracting with other parties.	• Adopting precast technology to reduce the execution time or reduce the overhead cost of installing the structural elements. • Used the built-in technology in mechanical-electrical equipment for building supply. Impact for the project:
	Special Authority	Synergy among stakeholder throughout design process. For instance: simulation technology, laboratory experiments or spatial	Developing collaboration with material providers which has technological licenses. For instance, ready mix company, a steel fabrication company, specialist simulation modelling for construction and specialist equipment for construction.
	Regency/City	Synergy among stakeholder throughout design process. For instance: simulation technology, laboratory experiments or spatial	Developing collaboration with material providers which has technological licenses. For instance, ready mix company, a steel fabrication company, specialist simulation modelling for construction and specialist equipment for construction.
Complementary	Province	Complement tasks function among team works based upon individual experience who has the multi-skills (i.e quantity surveyor and site engineer with other skill in engineering drawings)	- Hiring experienced and reputable site-engineers (i.e. Site engineers from high-rise building, marketing staff who has degree from accounting background - Collaborate with specialist engineers which have relevance in building projects. Impact for the project: -
	Special Authority	Separation role of procurement staffs	- Appointing a team leader for technical coordination purposes, supervision and planning activities. - Separation procurement activities in administrative/non engineering works and building projects/infrastructure teamworks
	Regency/City	Separation role of procurement staffs	- Appointing a team leader for technical coordination purposes, supervision and planning activities. - Separation procurement activities in administrative/non engineering works and building projects/infrastructure teamworks
Financial	Province	• Sufficient capital for running the project execution • Organisational approach from bottom-up	-Encourage the private sector engagement in public building initiatives - Bottom-up management approach to setting up the project goals (i.e. Participatory design: user engagement in formulating a business plan,

Dynamic Capabilities View	Level of local authority	Strategic Approach	Strategic method for enhancing success at public building project
			sounding the feedback and follow-up during pre-construction activities)
	Special Authority	• Innovation of local leader • Collaboration with investors or other institutions	Developing grand-design financial scheme and umbrella regulation of construction investment (excludes governmental budget).
	Regency/ City	• Standard wages of engineers • Standard prices of construction value	Implementing competitive prices of building construction projects through the market mechanism under the stakeholder control.
Reputational	Province	Centralise system, in terms of procurement document authorisation and validation or assessment of service providers.	-Identifying and tracing the performance track-record based on employer recommendation and product performance (i.e. Local authority database of contractors' portfolio) -Developing integrated IT system for historical performance works among different level of authorities (central and local levels)
	Special Authority	Identifying cash-flow performance in a particular period	- Implementing pre-requisite the procurement by minimum three months of bank statement prior to the auction date
	Regency/ City	Revisited the lowest price in selecting contractors	- Minimise the deviation between estimation, building value and contractor prices - The assess viability of standard price and profit margin in order to stimulate the motivation of building practitioners
Structural	Province	Networking by mutual parties	Collaboration with structure experts, specialist contractors.
	Special Authority	Structuring authority's management into different organisational functions	Structuring the staffs into different tasks (administrative and technical or engineering).
	Regency/ City	Category and priority project	- Market segmentation by categorical building project (i.e. Hospital or bank office building has reputable performance in local authority projects). - Scale of project capital investment that influence the contractor case flow.
Market	Province	Existing market merchants (market traders)	Convincing the existing market merchants for reconciliation the process of revitalisation from business plan to completion stage. Involving the existing market merchants in the socialisation process of revitalisation among other stakeholders
	Special Authority	Population of students per annum.	– Ensuring the capacity of buildings are sufficient for academic activities. – Developing a building master plan as a tool for

Dynamic Capabilities View	Level of local authority	Strategic Approach	Strategic method for enhancing success at public building project
			decision making of local leaders. – Establishing a sustainable supply chain of building providers, materials or sub-contractors by internal and external parties – Increasing collaboration with end-user or industry (i.e. Research works, business improvement service, independent investigation, improvement of academic curriculum and human resources support to industry)
	Regency/ City	Local workforce or employability, various resources in construction materials and local culture which have been growing up.	-Encouraging local training for skill labours -Promoting best practice, health and safety for small construction firms -Technical assistance for regulation making in local institutions or authority

Table 9-1c. Strategic Approach by Path Dependencies

Dynamic Capabilities View	Level of Local authority	Strategic Approach	Strategic method for enhancing success at public building project
Previous investment and business development	Province	Transformation business activities from related engineering based or by developing experience and supported by sufficient capital investment.	Diversification business activities
	Special Authority	• Training or education investment to employee or staffs • Stocking up the materials earlier	-By sending staff to particular courses of procurement or in-house training -Developing personal development (PD) that integrated with a bureaucratic system. -Reducing the cost of mobilisation and labours -Simplifying of quality control (not just for formality report)
	Regency/ City	• Training or education investment to employee or staffs • Stocking up the materials earlier	-By sending staff to particular courses of procurement or in-house training -Developing personal development (PD) that integrated with a bureaucratic system. -Reducing the cost of mobilisation and labours -Simplifying of quality control (not just for formality report)
Established routines	Province	Knowledge absorbing from previous experience (of revitalisation) and focus to merchant expectation in achieving the building specification. In other words, focus in capability logic (changes for strategies objective).	-Following local building procedures (i.e. SIBP (design consultant permits), IMB (building construction permit), AMDAL (environmental assessment)) -Revisit the previous failures of revitalization activities (by design, socialisation, execution, project documentation and technical assistance to market merchants), and doing corrective action on the current project activities (by improvement strategy to accelerate the process of construction, i.e. long term collaborative with subcontractors and expertise in public building community)
	Special Authority	Local rules in public building managements throughout regular investigation, as a part of accountability in local authorities.	-Balancing the quality control and quality assurance with building specification throughout adequate local budget. -Improvement process of recruitment contractors in terms of specification and assessment guidance
	Regency/ City	Local rules in public building managements throughout regular investigation, as a part of accountability in local authorities.	-Balancing the quality control and quality assurance with building specification throughout adequate local budget. -Improvement process of recruitment contractors in terms of specification and assessment guidance

Appendix 9- 2 A Typology of Strategic Responses Based on Institutional and Resource Dependence Perspective (Oliver, 1991:152-159)

Definitions:

- Acquiescence: "the alternative form of organisational pressures"
- Compromise: "political approach in local authority by local leader who has constituent. In other words, represent the thin edge of the wedge in organisational resistance to institutional pressures."
- Avoidance : "precluding the necessity of conformity by concealing their non-conformity and buffering the organisation from institutional pressures. In other words, escaping from institutional rules"
- Defiance : "the active form of resistance to institutional process"
- Manipulation: "purposeful and opportunistic attempt to co-opt, influence or control institutional pressures and evaluations"

Appendix 10- 1 A guidance outline and tools for further research

Guidance

Sustainable Dynamic Capabilities of Public Building Projects Managed by Local Authority

A GUIDE FOR DECISION MAKER

(Indonesian Local Authorities context)

Prepared by

FERRY HERMAWAN

January, 2017

OUTLINE :

GRAND DESIGN

SUSTAINABLE DYNAMIC CAPABILITY of PUBLIC BUILDING PROJECTS FOR LOCAL AUTHORITY LEVEL

The Assessment Tools

Coventry, September 2015

Assessment Summary

Project Case : **Level of authority : Province/ Special Authority/Regency/City**

Assessment I : Interaction LACU

Phase	LA			C			U			Summary (<, > OR =)						Conclusion (L/M/H)
	L	M	H	L	M	H	L	M	H							
Conceive										LA		C		U		
Develop										LA		C		U		
Execute										LA		C		U		
Finish										LA		C		U		

Assessment II : Control Indicators

Indicators *)	Conclusion (L/M/H)
Beneficiary for public	
Profitable for business	
Skill and experties support	
Meet the budget and specification	

**) Narratives of assessment should be attached in this document and authorised by assessors. If necessary can accompanied by photo or copy of archival documents*

	Assessment Phase and Criteria (L/M/H from Conclusion column				Assessment GRADE **)
Assessment I	Conceive	Develop	Execute	Finish	
Interaction level					
Assessment II	Beneficiary for public	Profitable for business	Skill and experties support	Meet the budget and specification	
Indicator level					

***) see the Assessment Rubric*

Assessment Rubric

No	Performance Indicators				GRADE
1	H	L	L	L	
2	H	M	L	L	
3	H	M	M	L	Baseline
4	H	M	M	M	Baseline to Adaptation
5	H	H	L	L	
6	H	H	M	L	Adaptation
7	H	H	H	M	Adaptation to Development
8	H	H	H	L	Development
9	H	H	H	M	Development to Outstanding
10	H	H	H	H	Outstanding

Notes:

Value of parameters for interaction model LACU: L =0.1; M=0.5 or H =1

Control indications: L = No changes for public by existing condition; M = Any changes for public by existing condition but still not significance; H = The project contributes a significant changes for public

Action Plan for Decision Maker

GRADE	Recommendation	Advices Note for Improvement
Baseline		
Baseline to Adaptation		
Adaptation		
Adaptation to Development		
Development		
Development to Outstanding		
Outstanding		

Authorisation

Assessed by	**Print name**	**Signature**	**Date**
Building Energy Team/ Expert (s)			
Authorised by Local authority			
Building Agency/City council/ Building Control			
Documented by			
City council and Construction Service Development Board			